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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Commercial Refrigeration Note
Puzzle of the Week
Real Good Weather— In Advance!
Refrigerated Eggs On the Highway
No Panic Button
They Changed the World
Philosophy of the Week

Stories of the Week

Nervously two expectant fathers paced around the waiting room of a hospital maternity ward.

"What rotten luck," grumped John. "This had to happen during my vacation!"

"You think you got troubles?" cigaretted Bob. "I'm on my honeymoon."

Noting that memberships in the Baptist Church are increasing faster than population growth, statisticians have worked out a bemusing ratiocination.

By the year 2015, there will be more Baptists than people!

For those people who like to worry, this is the life!—DAN BENNETT.

The joy of this world, when you have summed it up, is found in the making of friends.—BILL MULLER.

Commercial Refrigeration Note

Miss Lola Mason of New York City recently was crowned:

Miss Frozen Rabbit Meat.

That's our dish, nowadays, we old-timers.

No Panic Button

American business has wrestled with the "hard sell" in only two short periods since the start of World War II—1948 to 1949 and 1953 to 1954. In today's business climate of cutbacks in inventories and capital spending, most companies are well into the third "hard sell" period.

To find out what American business is doing about it, *Dun's Review and Modern Industry* surveyed companies across the nation.

In summarizing the survey results, Thomas Kenny states: "No one is reaching for the panic button. Few are embarking on crash programs. Instead, most are intensifying their regular selling efforts."

(Concluded on Page 8, Col. 1)

Asks Anti-Bid Shopping Bill Be Deferred

Senator Sees Passage Impeded by Objections

WASHINGTON, D. C.—A request that the Federal Construction Contract Procedures Act — the so-called anti-bid shopping bill—be taken off the Senate calendar and sent back to the judiciary committee for public hearings was made recently by Sen. Hubert Humphrey, Minnesota Democrat.

In a letter to Sen. John McClellan, Arkansas Democrat and sponsor of the bill in the Senate, Humphrey asserted,

"I honestly feel that the objections to this bill—with some of which I agree—and the amendments which will undoubtedly be offered in the absence of a more comprehensive committee record, will impede the passage of this legislation this year.

"I think a re-referral would be the best course to pursue under the circumstances."

The bill, H.R. 7168, after being passed by the House of Representatives, was reported out of the judiciary committee last fall without public hearings. Since then the Senate has not considered the bill or its

(Concluded on Page 25, Col. 1)

Carrier Chiefs

See Earnings Rise In 1958

NEW YORK CITY — Both Cloud Wampler, chairman, and William Bynum, president, said they believe Carrier Corp. will show a rise in earnings in this fiscal year over the preceding one even though net sales in this period are expected to be down a "small amount."

All new orders booked by the firm during February showed a sharp upturn and reached 132% of budget, a 15% increase over

(Concluded on Page 25, Col. 1)

April 10 Set as Reply Date In Ice Cream Cases

WASHINGTON, D. C.—Counsel for all parties in the Federal Trade Commission complaints of unfair trade practices against nine large ice cream manufacturer-wholesalers have been given till April 10 to file replies to the proposals and briefs filed by opposing counsel, Henry Lewis, hearing examiner in the cases, told the NEWS recently.

These are the cases in which nine ice cream companies have been charged with the "give-away" of refrigeration equipment, among other things, to win new or retain old accounts.

Asked how soon a decision might be reached in the cases, which have dragged through three years of hearings, Lewis said:

"In view of the complex factual and legal issues involved, I could not, at this time, even begin to give you an estimate as to how long it will be before my decision issues.

"As you may know, I am also the hearing officer in a number

(Concluded on Page 7, Col. 5)

Texas City Seeks Uniform Cooling, Refrigeration Law

CORPUS CHRISTI, Texas—A uniform installation ordinance covering heating, refrigeration, and air conditioning is being sought here, it has been reported.

At a meeting held recently in City Hall, some 40 representatives of the three fields in Corpus Christi went on record as favoring such an ordinance.

According to Lloyd Clarkson, chief of the city's building inspection section, copies of a San Antonio ordinance similar to the one sought here will be distributed shortly to industry members. Two weeks later, he added, a meeting will be held to discuss the San Antonio ordinance and to appoint commit-

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BEHIND PAGE ONE . . .

Pre-Season Room Unit Promotions
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Most Contractor-Dealers Think '58 Cooling Sales 'Will Be Up,' Plan To Push Residential Jobs

DETROIT—If the opinions of key air conditioning dealers and contractors prove correct, 1958 air conditioning sales will increase over 1957, despite the current slumb in general business.

Returns from a survey made by the NEWS among several hundred outlets for air conditioning equipment in all parts of the country showed a resounding 70% predicting better air conditioning sales from their operations in 1958; 20% feeling that sales would be about equal those of 1957; while only 10% of those replying felt they would do less than in 1957.

These dealers are tackling the 1958 sales year with their enthusiasm undimmed by any setbacks they may have met last year, it was indicated by their replies to the question "Are you planning to put more effort into any of the air conditioning categories this year?" The big majority—82%—of those replying answered "yes" to this question.

Residential air conditioning is the category which will get the most added effort among the dealers covered in the survey, with industrial air conditioning second in this respect, and commercial a close third.

Ninety-three per cent of these dealers also said they would promote air conditioning more actively in 1958 through a variety of merchandising and promotion methods, and in answering the question "What type of promotion works best for you?" 34% mentioned newspaper advertising, 33% named personal calls, 30% indicated direct mail, 14% mentioned radio, and 8% listed television advertising.

Comments from the individual dealers reflected their optimism about the prospects for 1958, and their enthusiasm for the general future of air conditioning (they were given the option of having their names used or not used in connection with any quotations from their answers, so some of the quotes will be anonymous).

"Prospects look better, it's a growth cycle, and it's evident that more people are conscious of air conditioning," says John McManus, McManus Heating & Refrigeration Co., Pittsburgh. McManus also says he is going to put more effort into air

(Continued on Page 10, Col. 1)

More Survey Details Coming

Results of the NEWS survey of air conditioning dealers and contractors are being published in three instalments.

The first instalment, which starts in the adjoining column, reveals how survey participants evaluate their prospects for this year and the part of the market to which they will devote increased attention. Individual comments of the contractors (see carry-over pages) disclose many interesting views on market conditions.

Dealer and contractor opinions on what they consider the most effective promotional methods will be covered in the second article. The third instalment will feature reactions to a question on major selling problems.

N. Y. Cooling Buyers

Insured 100 Days Of 72° Weather or 'Get Some Refund'

NEW YORK CITY—Purchasers of General Electric Co. commercial and industrial air conditioners in this area "will have the weather under control this summer."

Dealer Controlled Weather Corp. is offering a "Controlled Weather Insurance Guarantee" to each buyer of its commercial and industrial air conditioning equipment. This will "unconditionally guarantee air conditioning weather."

"At least 100 days of maximum daily outdoor temperatures of 72° F. or more during the period May 1 through Oct. 15, the normal cooling season," are guaranteed. "(Temperatures to be taken from official readings published by the U. S. Weather Bureau, Battery Park Station.)"

Controlled Weather Corp. states "With your air condi-

(Concluded on Page 25, Col. 1)

In Two Areas

Distributors' Conditioner Sales Jump In Early '58

PHILADELPHIA — Distributor air conditioner sales in five area counties took a decided jump for the first two months of this year to 9,071 compared with the 7,449 sold during the like 1957 period, it was announced here.

There were 5,506 sold in February as against 4,637 sold in the same month a year ago, the Electrical Association of Philadelphia recently reported.

ST. LOUIS—Distributor sales to dealers of air conditioners in the area served by Union Electric Co. boomed 74.9% higher in January than the like 1957 month, the electric utility reported.

There were 698 air conditioners—89 of ¾ hp. and under, 609 of 1 hp. and over—moved during the first month of 1958 as against only 70 last December and 399 in January a year ago.

Make Your FIRST CHOICE

READING
COPPER TUBING

Made by
Copper Tube SPECIALISTS

And
RED BRASS
PIPE

SECOND to NONE
for Refrigeration &
Air Conditioning Equipment

READING TUBE CORPORATION
EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

Jan. Wholesale Sales At Same Level as '57

WASHINGTON, D. C. — Air conditioning and commercial refrigeration distributor sales in January remained at the same level as the like 1957 month and rose slightly by 3% over last December, the monthly wholesale trade report by the Bureau of the Census has indicated.

Inventories at the end of January stayed the same as December but climbed 10% over January, 1957.

Plumbing and heating equipment supplies distributor sales slid back 5% from December in January and dropped 8% below the first month of 1957, the bureau reported.

Inventories in January were unchanged from December but gained 1% over the same 1957 month.

Hussmann Sales for First Quarter Hold, Earnings Drop Off

ST. LOUIS — Although first-quarter sales of Hussmann Refrigeration, Inc. will be "about even" with year-ago results of $7,458,289, earnings "will probably be a little off" from last year's first-quarter net income of $446,903, or 35 cents a share, William B. McMillan, president, told the annual meeting.

"Orders so far this year compare favorably with a year ago," McMillan went on, "while shipments are running a little behind, in large measure due to bad weather." Consequently, he added, backlog has gone up where a year ago it was down slightly.

Commenting on 1958's outlook, McMillan said "We're fortunate we serve the retail food store business, which has been and is one of the bright spots in the economy." Field reports, he continued, indicate store owners are going ahead with construction projects because of lower borrowing rates "which means they are going ahead with refrigeration equipment purchases."

In response to a stockholder's question on the status of the $2,350,000 Haddonfield, N. J. plant on which construction was halted last year, McMillan said "We felt a lessening in confidence so we stopped it. We don't feel we have an immediate need for the capacity from the plant. It's just on the shelf for the moment."

Agreement Ends Suit Over Room Unit Patents

CHICAGO — An agreement has ended the Federal court suit here over a window air conditioning unit patent between Chrysler Corp. and two Chicago manufacturers.

Chrysler had sued Cory Corp. and its subsidiary Mitchell Mfg. Co. charging infringement of U. S. Patent No. 2,726,518.

Defendants said the patent was invalid and, in a counterclaim, charged plaintiff Chrysler with illegally attempting to capitalize on its ownership. The latter denied the charge.

Judge Win G. Knoch ordered dismissal of the suit.

Imperial Salesmen Visit New Plant In Chicago

CHICAGO—One of the features of the annual sales meeting of The Imperial Brass Mfg. Co. was an inspection tour through the company's new plant in Niles, Ill. (Chicago suburb) by both Imperial salesmen and their wives.

The plant went into full operation during 1957.

At the sales meeting, Imperial's 1958 sales programs were reviewed. Among features are a new color movie on tubing tools, new sound slide film, new promotional material, and a number of new products.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

WEDGE UNIT
4 models
1,000 to 6,000
BTU'S Per Hour
CUB CURVETTE
3 models
800 to 4,000
BTU'S Per Hour
COOLMASTER
14 models
2,500 to 160,000
BTU'S Per Hour
AIR CONDITIONING
UNIT
3 to 10 Ton
UNICON for Unlimited Tonnage; any size compressor can use this remote air-cooled condenser. Minimum head pressure maintained by patented Winterstat.
COIL AND BAFFLES
15 Stock Sizes
THERMOBANK automatic re-evaporator hot gas defrost systems. There is a THERMOBANK for every application from 36° to minus 75°.
LARGE CURVETTE
7 models
3,500 to 30,000
BTU'S Per Hour
KRAMER
PRODUCTS
Have earned an unsurpassed reputation for leadership and dependability that makes it easy for wholesalers and contractors to grow and prosper.
Designed and engineered to the highest standards, users of KRAMER products stay sold. Pictured are a few of the many KRAMER products—each a standard of the industry.
KRAMER TRENTON CO. • Trenton 5, N.J.
44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Cast aluminum end frame for Delco 48-frame motor

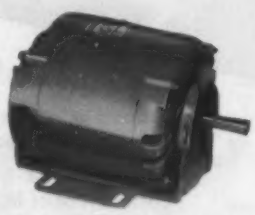
DELCO MAKES THEM STRONGER

Heavy, rock-rigid 48-frame motor end frame keeps shaft and bearing aligned

No problem with rigidity here. This end frame is a rugged, one-piece die casting, designed to withstand the jolts and jars of shipment and years of constant use. Sturdy structural ribs give it enormous strength for its size while maintaining light weight.

The extra rigidity, extra close fit of this end frame is assurance of precision bearing alignment. It's typical of *all* the extras that Delco builds into its 48-frame motor—a motor rock-rigid throughout, as trouble-free as years of engineering experience can make it.

Doesn't your product deserve one? Wouldn't you like the added assurance of *customer* satisfaction that goes right along with Delco Products power—power backed by the world's largest independent electric motor service organization? Simply call your nearby Delco Products Sales Office or contact Delco Products, Dayton, Ohio.



Typical 48-frame split-phase motor. Also available in capacitor-start, shaded-pole, and permanent capacitor types engineered to customer requirements.

DELCO MOTORS

Delco Products, Division of General Motors, Dayton, Ohio

- APPLIANCE MOTORS • INDUSTRIAL MOTORS
- GENERATORS • ACTUATORS
- AUTOMOTIVE AND HYDRAULIC EQUIPMENT
- HERMETIC MOTORS AND CONTROLS
- RESIDENTIAL GARAGE DOOR OPERATORS
- AIR SUSPENSION COMPONENTS

Experimental Natural Gas Residential Unit Uses 'Free Piston' Principle

DEMONSTRATIONS of a unique experimental air conditioning unit at Battelle Memorial Institute, Columbus, Ohio were observed by some 45 representatives of refrigeration equipment manufacturers recently. Manufacturers' representatives attending a demonstration, at the invitation of the American Gas Association, are shown inspecting the experimental 3-ton residential air conditioning unit which operates on the so-called "free piston" principle and is powered by natural gas. The unique free-piston air conditioner, according to technologists, promises important fuel savings and efficiency in home air conditioning equipment of the future. The demonstration unit is the result of a research and development program, now in its third year, being sponsored at Battelle by the AGA. It is based on original studies sponsored by the Remington Arms Co.

To Introduce Model Law To Improve Packaging, Labeling of Frozen Food

CHICAGO — Concerned over need for regulation of the frozen foods industry, food and drug officials of the nation plan to introduce a "model" law for adoption by individual states.

The proposed legislation probably will be presented this summer (June 15-19 in Las Vegas, Nev.) at the annual convention of the Association of Food and Drug Officials, according to Lowell D. Oranger, president of the group, who said that frozen food packages must be protective and the label must be truthful.

Speaking to convened National Association of Frozen Food Packers here, he stated "The problems involved in Transportation and distribution of frozen foods" have never been properly regulated. Regulatory officials at both Federal and state levels are concerned with packaging and labeling of frozen foods, he indicated.

RACCA Admits Several New Contracting Firms

CLEVELAND—Refrigeration & Air Conditioning Contractors Association announced several new contracting firms have been admitted to membership in the national.

Second quarterly directors' meeting in Las Vegas, Nev. Feb. 25-26 admitted Paul R. Hosler of Paul R. Hosler, Inc., Ft. Wayne, Ind.; M. A. Leoni of Modern Refrigeration Co., Cedar Rapids, Iowa; and Ralph W. Lampie of Richmond, Va. as direct members of RACCA national.

An application from RACCA of Southern Illinois, which includes contractors from E. St. Louis, Belleville, E. Alton, and neighboring towns, was accepted also.

New members admitted to affiliated local associations are Arthur Boot Co., Post Fixture Co., Don Williams Corp., and Udell Refrigeration, all of Grand Rapids, Mich. and Temperature Engineering, Inc. of Denver.

Acme Reports 35% Rise In Earnings

JACKSON, Mich.—A 35% increase in net earnings was reported by Acme Industries, Inc. for the first half of its fiscal year to Jan. 31, 1958.

Net income was $122,725 after all charges, equivalent to 32 cents a share on the 382,791 capital shares to be outstanding after delivery Feb. 25 of a 5% stock dividend declared Dec. 16, 1957. The earnings compare with $90,493 for the corresponding 1957 period, or 23 cents a share on the same capitalization.

Net sales for the half-year to Jan. 31, 1958, were $4,186,853 compared with net sales of $4,179,725 in the corresponding period last year.

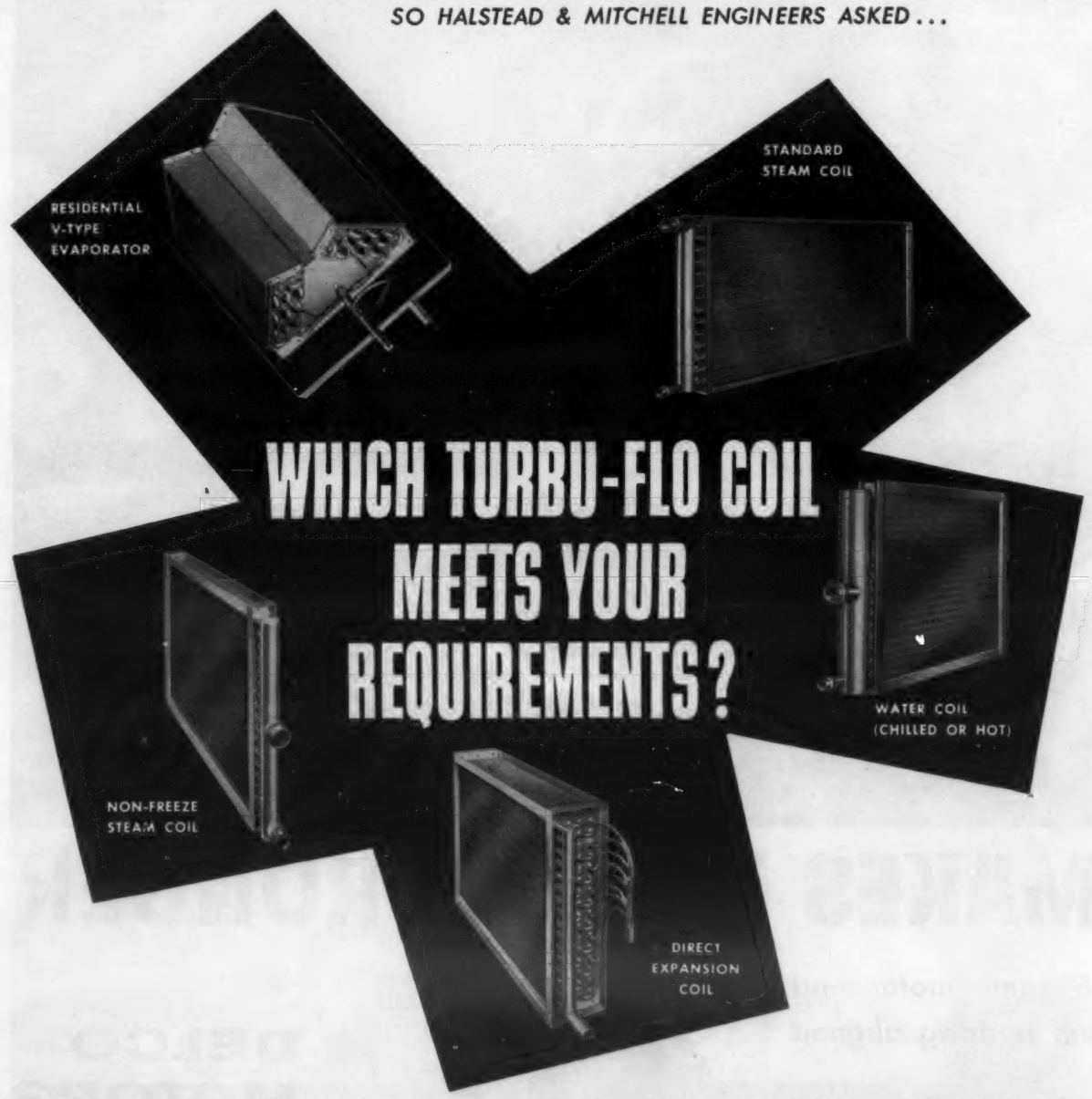
Rheem Reports Rise In 1957 Net Income

NEW YORK CITY—Net income of Rheem Mfg. Co. during 1957 amounted to $1,968,916, equivalent to 97 cents a common share after preferred dividends, it was announced in the annual report to shareholders.

"Results for 1957 represent a turn-around from net loss of 1956 of $9,163,134, or $4.75 a share," A. Lightfoot Walker, president, said. Sales in 1957 were $188,580,607, highest in the company's history and 8% above 1956 sales of $173,903,212.

During 1957, sales by foreign affiliated and associated companies of products under Rheem license and agreement amounted to $34,000,000, approximately 6% above the previous year's $32,200,000.

SO HALSTEAD & MITCHELL ENGINEERS ASKED . . .



Halstead & Mitchell coils with Turbu-Flo fins are designed for rugged and long service life. And Turbu-Flo provides up to 15% more heat transfer capacity.

STEAM COILS are available in both standard and non-freeze types. WATER COILS are for use with chilled or hot water. DIRECT EXPANSION COILS are equipped with a pressure type distributor and circuited for minimum refrigerant pressure drop . . . will accommodate any make expansion valve, refrigerants 12 or 22. All coils are regularly available in from 1 to 8 rows deep, in finned heights of 12 to 36 inches, and in lengths up to 10 feet. Manifolding can be arranged for left, right or opposite-hand connections. Other sizes or special coil types can be provided to meet your specifications.

EXCLUSIVE, EFFICIENT TURBU-FLO

All coils feature the exclusive Turbu-Flo fins. Streamline design creates better air wash, lowering air film resistance and improving heat transfer; yet friction is at a minimum.

Turbu-Flo fins are made of aluminum (available in copper), mechanically bonded to seamless copper tubing.

Casings are of heavy gauge steel fully protected against corrosion or of heavy gauge aluminum. Surrounding flanges simplify ductwork installation.

Write for more specific information, delivery and prices. *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.*

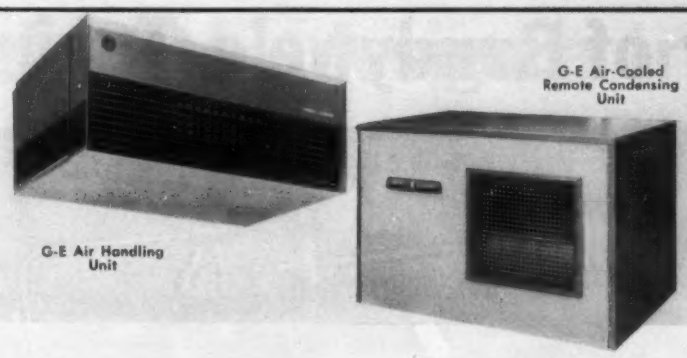
HM Halstead & Mitchell

BLUEPRINT for LEADERSHIP

in residential heating and cooling

G-E Whole-House Packaged Cooling Unit

BLUEPRINT **for taking a big lead in cooling sales with the most flexible air conditioner on the market—General Electric's whole-house packaged unit.** This compact, low-cost G-E Residential Air Conditioner is making history! It's a natural for ranch-type homes—but any type home is its market, *regardless of heating system.* Air-cooled, *self-contained,* it can be installed with, or completely independent of the heating system, in attic, closet, utility room, crawl space, garage, any convenient place. Cash in on its popularity!

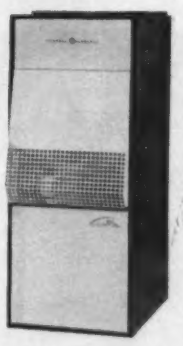


G-E Air Handling Unit

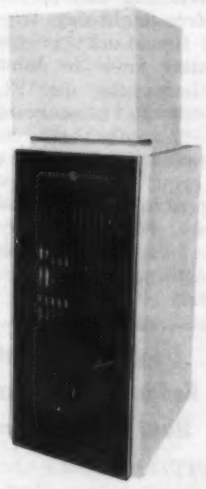
G-E Air-Cooled Remote Condensing Unit

BLUEPRINT **for rounding up air-cooled split-system sales in the home cooling market—General Electric Remote Condensing Unit.** Air-cooled remote condensing unit is weather-proofed—may be stationed anywhere—inside or out. For remote application with G-E Cooling Coils and Furnaces—or handsome new General Electric Air Handling Unit (shown). Latter may be tucked into any convenient space in house. Your market:—homes with limited space.

BLUEPRINT **for moving out ahead in the oil heating field—with General Electric's smart new Custom Oil Furnace.** Another smart unit chock-full of appeal to women! The clean, quiet, upflow General Electric Oil Furnace is the lowest hiboy type on the market—only 55" high and takes very little floor space. Ready for adaptation to whole-house cooling. Manufactured to General Electric's high quality standards, it's priced competitively with ordinary furnaces. *Every time you sell a Custom Oil Furnace you've built a prospect for a General Electric Air Conditioning Unit.*



BLUEPRINT **for capturing the *premium* sales in gas heating—General Electric's beautiful new IMPERIAL Gas Furnace.** So smart-looking, most owners prefer to show it rather than hide it in the cellar or utility room. Quiet, clean, all-automatic, it's especially attractive to women. Men go for its famous Pin-Point Heat Exchanger and advanced safety and engineering features. Equipped with a Slow Speed Blower which makes it easy to add whole-house cooling. Upflow and downflow design with matching add-to air conditioners. *Whenever you sell one, you're on the way to selling General Electric Year 'Round Air Conditioning* (as shown).



A BIG PROFIT PLAN FOR YOU FOR '58!

Quality products are only the beginning! Your General Electric BLUEPRINT FOR LEADERSHIP Plan gives you a course in selling—attractive financing plans—national advertising and promotion—guided local advertising—and the selling power of the General Electric name. Join the profit parade! If you don't have a General Electric franchise, contact your nearest General Electric Distributor or mail the coupon today.

General Electric Company, Home Heating and Cooling Dept., Tyler, Texas

EVEN MORE NEW G-E PRODUCTS COMING YOUR WAY! *Watch for them!* THEY'RE PART OF YOUR GENERAL ELECTRIC BLUEPRINT FOR LEADERSHIP!

Progress Is Our Most Important Product

GENERAL ELECTRIC

In Canada, Canadian General Electric Co., Ltd., Montreal

ACD 4A

General Electric Company
Home Heating & Cooling Dept., Tyler, Texas

I am interested in signing up with General Electric so that I can benefit from G.E.'s Blueprint for Leadership Plan.

NAME_____

FIRM_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

Pre-Season Promotions Pay Off

MIMAS, 'Operation 95,' 'Earlybird' Drives Get Air Conditioner Sales Off to Early Start

DETROIT — Two air conditioner promotions that succeeded despite winter weather were recently reported.

In a large two-week preseason drive, facing such obstacles as unusual sub-zero weather and ice-covered streets, Harvey's of Nashville, Tenn. sold over $20,000 worth of Fedders-Quigan Corp. room air conditioners.

Best seller reported was a 1-hp. model selling for $200 followed by a 1½-hp. air conditioner at $260.

James Tyree, senior buyer for the firm in charge of sales, said all personnel wore large buttons reading "Ask me about MIMAS"—"May I Make a Suggestion."

When asked, salespeople responded, "May I suggest you visit our air conditioning department and perhaps buy Fedders."

Customers were given slips bearing the salesperson's name. When a sale was completed the customer dropped the slip in a box for a final-day award and also put his own name slip into a bongo drum for a crack at a winning trip to Jamaico.

Winning salesperson received a free eight-day trip to Paris for two. Lucky customer got a similar jaunt to Jamaica.

Meanwhile, in Ft. Worth, Texas an announcement that free rosebushes would be awarded the first 200 customers entering Crump Co. store during a four-hour period on one recent day drew heavy traffic to see 1958 air conditioners.

Although cloudy and wintry, nearly 400 thronged the store and all bushes were gone within 90 minutes.

To the first 100 persons who entered, a package of three nursery-wrapped rosebushes were given; the next 100 received one nursery-wrapped bush.

In addition to selling two air conditioners, the promotion was successful in selling radios and television sets. It was felt that other sales will result from the prospects thought created. The promotion will be repeated.

Also jumping into the preseason swim was Olinde Hardware & Supply Co. which offered air conditioners at "earlybird" prices, deferring the first payment "until 30 days after the temperature reaches 95°."

Called "Operation 95," the promotion was described as "very successful" by J. B. Olinde, general manager, with 75 air conditioners being sold during the early stages.

Olinde had called the local weather bureau and found that for 15 years the weather in Baton Rouge, La. area reached 95° either in June or July.

The company then made arrangements with its financing agencies to handle the paper at the proper time. Olinde's campaign, offering General Electric Co. and Carrier Corp. air conditioners, lasted a month.

Same-Day Installation of Room Units Boosts Sales Volume 25%

ST. LOUIS — Offering same-day installation of room conditioners, including delivery, all wiring, and a complete check, will sell at least 25% more units than a given number of promotional dollars, reports Van Vancil, appliance department manager of Hampton Electric Co. here.

Vancil sold more than 1,000 room coolers during 1957, basing his approach on colorful three-quarter page newspaper advertisements, all of which stress "immediate installation."

Pointed out in each ad was the fact that Hampton Electric maintains a complete electrical contracting department, and as such can guarantee installation at a specified time on any day.

With some 17 vehicles available for such rush deliveries, the company has been able to rush out every requested unit ordered by telephone or a prospect dropping in, to have it in operation before the selling day closes.

Comparing results during 1957 with 1956, Vancil found that '57 sales figures were exactly 25% greater than 1956, with a promotional expenditure for newspaper, television, radio, and other media of exactly the same.

5-County Area Sales Up

PHILADELPHIA — Distributor air conditioner sales in this five-county area climbed to 3,565 in January compared to the 2,812 for the same month of last year, the Electrical Association of Philadelphia reports.

Dept. Store Features Fedders 'Four Seasons' Heat Pump Room Unit

PITTSBURGH — Jumping off to a pre-season start on room air conditioner sales, Rosenbaum's department store here recently had Meade Haskins, air conditioning engineer from Fedders-Quigan Corp., on hand to demonstrate Fedders' heat pump room unit.

Fedders "Four Seasons" 1-hp., 7½-amp, 115-volt. heat pump air conditioner, at manufacturer's list of $449.95, was demonstrated in the air conditioning department. The event was promoted in newspaper advertising.

G-E Allocates 1957 Carryover Models

LOUISVILLE, Ky.—The current carryover of General Electric room air conditioners must be allocated because of shortages in this merchandise, declares T. D. Eberhardt, marketing manager of the G-E Room Air Conditioner Dept..

He also said that prices had been raised about 3% on each of four models: the "Deluxe" ½-hp. and ¾-hp., 115-volt units; the Deluxe 1-hp., 230-volt unit; and the "Special" 1-hp., 230-volt unit.

Z-condenser of Bundyweld Tubing

New-design "Z" condenser made with leakproof Bundyweld Tubing fits *inside* General Electric's Straight-Line Design refrigerators and freezers. High thermal conductivity of Bundyweld plus fan (not shown) insure maximum cooling efficiency.

BUNDYWELD IS DOUBLE-WALLED FROM A SINGLE STRIP

Bundyweld starts as a single strip of copper-coated steel. Then it's . . .

continuously rolled twice around laterally into a tube of uniform thickness, and

passed through a furnace. Copper coating fuses with steel. Result . . .

Bundyweld, double-walled and brazed through 360° of wall contact.

NOTE the exclusive Bundy-developed beveled edges, which afford a smoother joint, absence of bead, and less chance for any leakage.

Haverly Pushes Spring Sales 'Carnival of Cooler Values'

ROYERSFORD, Pa.—"Spring Carnival of Cooler Values" is the theme of the comprehensive sales plan arranged by Haverly Equipment Div. of John Wood Co., according to Francis C. Ortner, who is general sales manager.

Featuring "Cooler Values for Hotter Weather," the promotion will make use of newspaper and radio advertising, direct mail, showroom displays, premiums, demonstrations, and price reductions, Ortner said.

"During the Spring Carnival promotion," it was pointed out, "dealers will be offering reduced prices and long-term finance plans, making it easier and more convenient for dairymen to buy Haverly bulk milk coolers before the hot season and pay for them in small installments."

Food Vendors In Western Setting Add 'Atmosphere' to Firm's Noon Meals

THIS Western stage setting was installed in the middle of a Kansas City, Mo. industrial plant 25 ft. from the main production line. It gives "atmosphere" to the food vending machines at Vendo Co., manufacturer of automatic merchandising equipment. Employes get their noon meal from machines. "We decided to bring scene changes to employes right in the plant," Bob Wagstaff, executive vice president, said. Vendo thinks the result will be increased employe efficiency.

Punxsutawney Names Howard Tebay as Vending Program Director

PUNXSUTAWNEY, Pa.—Appointment of Howard Tebay as vending program director has been announced by Punxsutawney Co. here.

Tebay has been a plant owner-operator for 16 years in the dairy industry and helped pioneer the vending of bottled and cartoned milk.

He was associated with Ideal Dispenser Co. for eight years, most recently as a district manager. He holds several basic patents in the vender field.

Herman L. Buffington, Punxsutawney president, indicated his firm plans to make upright bottle and can venders and to expand its line of horizontal bottle and milk vending machines.

Ice Cream Charges--

(Concluded from Page 1)

of other cases, in which I am engaged in holding hearings at fairly regular intervals.

"My commitments in these other cases, as well as an additional ones that may hereafter be assigned to me, will have an important bearing on how soon I will be able to complete by review of the briefs and records in the ice cream cases and write decision or decisions therein.

"The records in these cases are extremely voluminous, with the testimony approximating in excess of 12,000 pages and the documentary exhibits running to about 1,000 (some of which, in turn, contain many pages of complex statistical tables and economic data).

"I can only assure you that I intend to bring my part in these cases to a conclusion at the earliest date possible."

An extensive account of the Federal Trade Commission's case against the ice cream companies—as it pertained to the "giveaway" of refrigeration equipment and refrigeration service—started in the March 24 issue of the NEWS and concluded in this issue (Page 20).

TO OFFER DEFENSE

The ice cream companies' defense against these charges will appear in a later issue. In brief, they contend that they have furnished their accounts refrigeration cases since the first ones were built, that ice cream distribution economics require them to furnish cases, and attempts to sell cases have proved that ice cream dealers do not want to and will not buy or rent them.

They further contend that to prevent them from furnishing cabinets would put them at a competitive disadvantage because FTC has no jurisdiction over the strong intrastate competitors. They argue, too, that FTC has not shown that this practice injures competitors or tends to create a monopoly.

CLAIMS MUCH OF TESTIMONY HEARSAY

Much of the testimony cited by the counsel for the complaints to support its charges that furnishing cabinets does injure competition and tend to create monopoly (some highlights of which have been published in the last two issues of the NEWS) is hearsay and unsupported by factual evidence, the defense attorneys charge.

The Federal Trade Commission issued its complaint of unfair trade practices against eight of the ice cream companies in February, 1954 and started hearings in May of that year. Final hearing was held last fall.

The eight companies originally named were Arden Farms Co., Beatrice Foods Co., the Borden Co., Carnation Co., Fairmont Foods Co., Foremost Dairies, Inc., National Dairy Products Corp., and Pet Milk Co.

H. P. Hood & Sons, Inc. was added in October, 1955.

The complaints have been supported by the Refrigeration & Air Conditioning Contractors Association and the National Commercial Refrigerator Sales Association.

helps G.E. design a true "built-in"

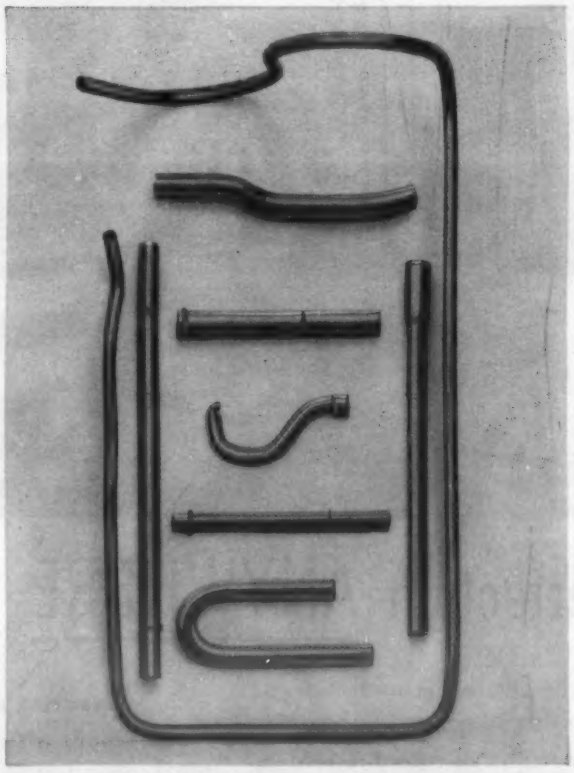
"Fold-up" condenser to go inside flush-fitting cabinets calls for the strength and ductility of Bundyweld Tubing

General Electric pioneered the modern "built-in" look with its Straight-Line Design refrigerators and freezers. However, G-E engineers were faced with a real challenge before the design became functional. Since flush-fitting cabinets restrict air circulation, conventional back-mounted condensers were not practical. Problem: relocate the condenser. Solution: G-E design ingenuity—and serpentine-coil tubing, such as that of Bundy Tubing Company.

Starting with the serpentine-bent Bundyweld,® G.E. forms a wire-tube condenser. Then this assembly is double-folded into a compact "Z." Result: a space-saving unit that fits *inside* the compressor compartment, where it gets adequate air circulation.

Bundyweld Tubing has the high strength and ductility to shrug off rough fabrication operations like this; still deliver extra years of dependable performance. Made by an exclusive process (below, left), Bundyweld is *leakproof by test.* That's why it has become the accepted safety standard of the refrigeration industry for evaporators, condensers, compressor parts, and refrigerant lines.

Add up: 1. Low-cost tubing fabrication by skilled Bundy® operators; 2. No-cost design aid from experienced Bundy engineers; 3. On-schedule deliveries to avoid costly production-line slowups—and you know why it pays to bring *your* tubing problems to Bundy. But why not find out for yourself . . . now? Call, write, or wire us today!



These parts for G.E.'s compressor (opposite page) are fabricated at Appliance Park, Louisville, Ky., from Bundyweld Tubing. Strong, ductile Bundyweld comes coiled, in straight lengths, or fabricated to specifications.

BUNDY TUBING COMPANY, DETROIT 14, MICHIGAN

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING • AFFILIATED PLANTS IN AUSTRALIA, ENGLAND, FRANCE, GERMANY, AND ITALY

There's no real substitute for

BUNDYWELD® TUBING

Bundy Tubing Distributors and Representatives: *Northeast:* Chas. H. Stamm, 10 N. Main St., West Hartford, Conn.; Austin-Hastings Co., Inc., 226 Binney Street, Cambridge 42, Mass. • *Middle Atlantic:* Atlantic Tube & Metals, Inc., 451 New Jersey State Highway #23, Wayne, N. J.; Ryan & Co., 1 Bala Ave., Bala-Cynwyd, Pa. • *Midwest:* Lapham-Hickey Steel Corp., 3333 W. 47th Place, Chicago 32, Ill. • *South:* Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg., Chattanooga 2, Tenn. • *Southwest:* Vinson Steel & Aluminum Co., 4606 Singleton Blvd., Dallas, Texas • *Northwest:* Eagle Metals Co., 4755 First Avenue, South Seattle 4, Wash. • *Far West:* Pacific Metals Co., Ltd., 2187 S. Garfield, Los Angeles 22, Calif.; Pacific Metals Co., Ltd., 1900 Third Street, San Francisco 7, Calif.

Bundyweld nickel and Monel tubing are sold by distributors of nickel and nickel alloys in principal cities.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

One of the more dramatic case histories cited is the case of a metals manufacturer who prefers to remain nameless.

This company has hit upon a new combination of marketing techniques. It was the only major producer in its industry to chalk up a higher net profit in 1957 than in 1956—and it is sure that 1958's sales and profits will top 1957's.

The theme of the company's program is *no cost reduction in the selling effort*. While other activities of the company have been cut back to the bone, the go-ahead signal is flashed for spending on sales.

With an increased advertising budget, this company also has plans to step up its spending for market research and sales analysis, in order to keep a close checkback on results.

Fortunately, the company anticipated the turndown in the national economy some months before it became apparent to most people.

As a result, the company began adding to its sales force early, and now has about 15% more salesmen than a year ago.

At the same time, management has been cutting down the size of sales territories to help salesmen work their territories more intensively.

From the survey results, Kenny has prepared the following checklist of specific sales stimulants. These are being put to use by several companies—and may be of help to others.

1. Make salesmen more effective.
2. Seek out new distribution channels for present products.
3. Conduct special promotions.
4. Move into growing markets.
5. Keep advertising strong.

Puzzle of the Week

"Now that mathematics seem to be the rage, I have a little quizzer for your 'Inside Dope' column," writes Ted Glou of Syracuse, N. Y.

It seems an India Rajah died and left his entire fortune in gold to the son who could answer the following problem.

Rajah Senior possessed 50 bags of gold. Each bag contained 50 pieces, and each piece weighed 50 grains. One of the bags was spurious, and contained a piece which weighed only 49 grains.

The first of his three sons who could solve the dilemma (the gold could be weighed only once) would receive the entire estate.

"I'd like to see what some of your readers of 'Inside Dope' can do with this," Ted continues. "They can send their answers to you if they want, or they can send them to me (647 South Warren St., Syracuse, New York). I would like to withhold the answer for a few weeks."

Real Good Weather—In Advance!

Quite soon, according to Dr. S. Fred Singer, earth satellites will provide accurate weather forecasts for months and possibly even years ahead.

These weather forecasts probably will affect our lives much more than any other application of missile-science or even space travel—in this century at least.

Farmers will gain much through such weather predictions; municipalities and public utilities will save money—and air conditioning merchandisers will benefit most of all!

Imagine what a boon it would be to production planners to know long in advance whether June would be cool or a scorcher!

Satellite weather program developments will contribute a phenomenal financial advancement to our total economy—much more than enough to pay the cost of flights to other planets.

And who can imagine what treasures the latter might bring back?

Refrigerated Eggs On the Highway

Advent of electricity and modern plumbing in rural areas would seem to have abolished the backyard "Chic Sale" forever. But, not so.

Upright rectangular structures have made a comeback. And this time in the FRONT YARD.

Dotting the landscape along the nation's highways are small buildings housing *refrigerated coin-operated* machines which dispense eggs in cartons of a dozen.

Enterprising farmers, eager to gain an extra 20 cents above the wholesale price for a dozen eggs, have added one more method to ease their economic plight. By vending directly to passing motorists each farmer adds to his stipend. Via up-to-date refrigerated facilities.

They Changed the World

Here, in the opinion of *Science Digest* editors, are the scientific developments of the last two decades which changed the world in your lifetime:

Polio Vaccine; Television; Radar; Transistors; Electronic Brain; DDT and Insecticides; Wonder Drugs; Cortisone; Psychiatric Drugs; Fluoridations; The Helicopter; Jets; Rockets; Dead Sea Scrolls; Kinsey Reports; Synthetics and Plastics; Revolution in Living; Food Revolution; Atomic Power.

Philosophy of the Week

Psychologists have discovered this about emotions. They are intensified by being expressed. Thus expression of pleasant emotions may tend to raise pleasant emotions to such a pitch that they are sovereign, and the same may be said for their habitual expression until they dominate character. On the other hand, even pleasant emotions which are habitually choked off before expression are a source of grave danger to mental health. — WARREN VINTON MURPHY.

God grant that not only the love of liberty but a thorough knowledge of the rights of man may pervade all the nations of the earth, so that philosopher may set his foot anywhere on its surface and say: "This is my country." — BENJAMIN FRANKLIN.

SEND FOR REPRINTS

Product Knowledge, Protective Maintenance, Trouble-Shooting, Adjustment, Repair of Electric Motors.
Only 40¢ each.
For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

For Perfect Air Conditioning EVERYWHERE

Install Perfection® ANYWHERE

Yes, you can install Perfection Heating and Air Conditioning equipment anywhere. In the illustration above the coils are above the Perfection Regulaire—with a remote evaporator installation. There are also self-contained units, Tuckaway and Economy Models, giving you the most complete line of residential and commercial air conditioning on the market.

Every Perfection air conditioner is a masterpiece—in performance, in appearance. Even the largest units are very compactly built and proportioned for maximum flexibility of installation. The Perfection line includes the revolutionary new heat pump.

Perfection air-cooled residential units are available in 9 sizes, from 2 to 10 ton capacity, as well as the efficient Silhouette 17, America's most beautiful window unit.

Perfection delivers more cooling, more effective dehumidification, better air circulation per current-dollar. Truly, this is America's most beautiful home conditioner.

Install Perfection for more satisfied customers —greater profit.

Heating and cooling equipment with a . . .

Full page color ads in Sunday Newspaper Supplements will tell your customers and prospects why they should insist on PERFECTION REGULAIRE for heating and cooling. Ask your Perfection Wholesaler for full details —direct mail—co-op news—radio-TV.

Guaranteed Comfort Since 1888

Perfection DIVISION OF HUPP Corporation

PERFECTION INDUSTRIES • CLEVELAND 10, OHIO

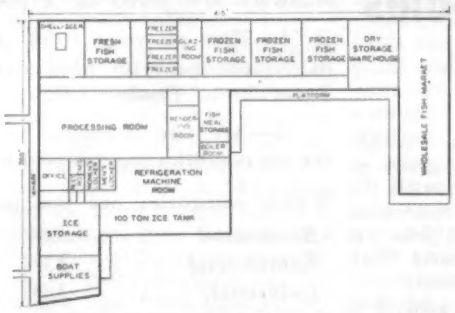
Frick's 'Biggest Job Ever'

To Install Air Conditioning, Refrigeration Facilities for Freezing, Processing, Packaging, Storing Fish In Terminal

WAYNESBORO, Pa. — Frick Co. has announced the biggest order ever placed with the firm in its more than 100 years of existence.

Refrigeration equipment for processing fish in the soon-to-be-built Terminal Pesquera de Cuba in Havana will be Frick's largest job.

This $3.5 million Cuban Fish Terminal will offer complete facilities, from ice and supplies needed before fishing boats sail, to processing, freezing, packaging, storage, and sale of the finny creatures—the last word, it is claimed, in fish handling and processing.



SCHEMATIC diagram of proposed Cuban Fish Terminal in Havana in which Frick Co. will provide refrigeration equipment for processing the fish.

PORTABLE CONVEYOR TO BRING FISH IN

A portable conveyor will carry fish direct from boats through a high-pressure wash-stream into the Terminal. Inside the catch will be automatically weighed and conveyed into a refrigerated room.

There three men will sort the fish for quality, size, and species, pack them to a specified weight in boxes. Each box will be filled with "Shell-Ice" from a storage bin supplied by a Frick automatic Shell-Ice machine regulated to work only when the supply in the bin is reduced.

After sorting and top-icing, fresh fish will be conveyed directly to the wholesale market area of the Terminal. Completely air conditioned, the market will have a tile floor and walls, no partitions. Fish will be sold every week day.

Other fish will be run to the processing room equipped with what is claimed to be the finest equipment available. Peak production will be 25,000 lbs. of fresh fillets in eight hours. Here, fish will be prepared for various consumer uses; trimmings and waste will be conveyed to the by-products plant for processing.

TO PACK IN ICE FOR FRESH-FISH STORAGE

Unsold or unprocessed fish will be placed in fresh-fish storage packed in ice. Consisting of two rooms kept constantly at 30° F., capacity totals 1,250,000 lbs. of fish.

Adjacent will be four air-blast freezers of 100,000-lb. capacity in 20 hours to freeze whole fish, fillets, or steaks. Temperature in tunnels will be -30 to -40° F. with air movement at the rate of 32,000 c.f.m. Packaged 1-in. thick fillets can be completely frozen within two hours, Frick explains; shrimp and small lobster tails frozen with "extreme rapidity." Special controls will notify operators when fish are frozen in each independent freezer. Automatic controls will adjust compressor operation to match the number of freezers in use.

On the outlet side of the blast freezers will be the glazing room, maintained at 32° F. To keep them in prime condition, frozen whole fish are always glazed before storing—as frequently are frozen shrimp and other items. Fish requiring glazing will be dipped in cold water in one of four tanks in the room.

Adjoining will be the three frozen storage rooms automatically kept at 0 to -10°. Total capacity will be over 2 million lbs. Nearby will be the by-products area to handle waste and trimmings. Fish meal and oil will be produced here.

A complete semi-automatic ice plant with a capacity of 100 tons of block-ice daily, operated by one man in an eight-hour shift, will have special machinery to fill ice cans. place them in freezing compartments, lift them out again, transport and immerse them in thawing tanks, then discharge the ice in a storage room. Automatically held at 28°, this room will be capable of handling 900 tons of ice. Ice will be loaded directly into trucks or by conveyor to the fishing boats.

Terminal will require about 85,000 gals. of water daily for making ice and condensing ammonia in the refrigeration system. A 450,000-gal. cistern will be installed under the building to catch rain water from the roof. A pair of cooling towers on the roof will supply 860 g.p.m. to the two ammonia condensers.

Refrigerating machine room will be heart of the Fish Terminal. It will include nine Frick heavy-duty ammonia compressors with 500-ton capacity—one 7 by 7, four 8 by 8's, two 11 by 10's, and two 13¼ by 9 boosters, interconnected by piping.

Air conditioned laboratory, offices, dining room, and 60-man conference room will be part of the structure.

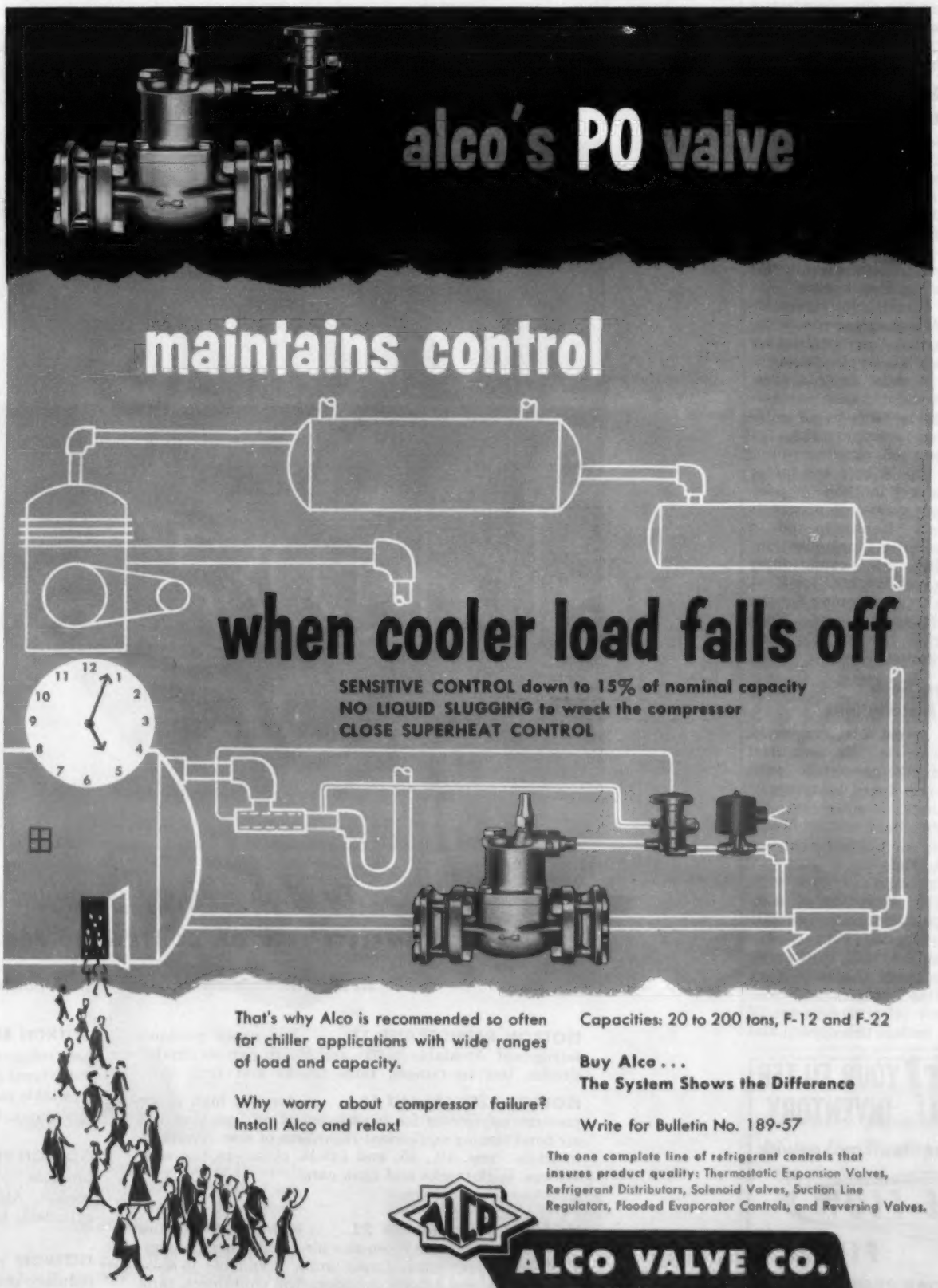
Death Notices

Harold C. Hansen, a founder and vice president of Modern Machine Works, Inc., Cudahy, Wis., died recently. He was 68.

* * *

Herman Bacharach, founder and former president of Bacharach Instrument Co., Homewood, Pa., died. He was 83.

A native of Germany, he was a mechanical engineer. He retired about 18 years ago as head of the precision instrument producing firm.


alco's PO valve
maintains control
when cooler load falls off
SENSITIVE CONTROL down to 15% of nominal capacity
NO LIQUID SLUGGING to wreck the compressor
CLOSE SUPERHEAT CONTROL
That's why Alco is recommended so often for chiller applications with wide ranges of load and capacity.
Why worry about compressor failure? Install Alco and relax!
Capacities: 20 to 200 tons, F-12 and F-22
Buy Alco . . .
The System Shows the Difference
Write for Bulletin No. 189-57
The one complete line of refrigerant controls that insures product quality: Thermostatic Expansion Valves, Refrigerant Distributors, Solenoid Valves, Suction Line Regulators, Flooded Evaporator Controls, and Reversing Valves.
ALCO VALVE CO.
853 KINGSLAND AVE • ST. LOUIS 5, MO
SEE YOUR ALCO WHOLESALER
7600

Looks Great for '58

70% of Dealers, Contractors Surveyed by NEWS Expect Rise In Air Conditioning Sales

82% Will Put More Effort Into at Least One Market

The following tabulation covers part of the results of the survey made by the NEWS among the air conditioning dealers and contractors, covering business prospects, promotion methods, and industrial problems. This tabulation covers answers to the first two questions in the survey. Answers are given as a percentage of the total replies.

1—How do your 1958 air conditioning prospects look in comparison with what you did last year? ***Better 70%; Same 20%; Poorer 10%.***

2—Are you planning to put more effort into any of the air conditioning categories this year? ***Yes 82%; No 18%.***

Which categories are you going to put more effort into?

Residential	*32%*	*Room Units*	*3%*
Commercial	*13%*	*Automotive*	*1%*
Industrial	*16%*		

(Continued from Page 1)

conditioning this year, since he feels the degree of success is related to the degree of effort. That he means it is evidenced by the notation on his reply "Please pardon my delay—I have been out selling!"

"Last November and December we were looking forward to a much smaller volume in 1958," says Walter McCarty, McCarty Bros. Equipment Corp., River Forest, Ill., "however, with the activity we have had during January, it looks like '58 will be as good or even better than '57. We are keeping our organization flexible and at all times are ready to take advantage of any up or down trends."

Florida Moving To Central Heating, Cooling

"Prospects for this coming year look very good, the trend in Florida being to central heating and air conditioning," says Thomas J. Garrard, D & G Air Conditioning Co., Tampa, Fla. "We are concentrating our efforts toward the modernization market in existing homes."

From Kissell Refrigeration Corp. in Los Angeles comes the statement that "air conditioning for industrial applications is becoming a must in this area, and we should increase our volume by 40 to 50% in all categories except window units. Air conditioning of existing office buildings should be a big factor in this market in 1958."

The "very good crop prospects in western Kansas" and a "better dealer organization" make 1958 air conditioning prospects look brighter for R. B. Gage of Air Conditioning Supply, Inc. (wholesale) and Gage Plumbing & Heating Co., Inc. (retail), Salina, Kan.

Customers Seek Better Installations

"More prospects, inquiries, and jobs than this time last year, and customers who want and will pay for a better job," have things looking up for George Pritchard of the Mader Heating & Air Conditioning Co., Lakeland, Fla.

"All prospects are 'good' with the possible exception of commercial package units," asserts Leonard Morris, Five Towns Refrigeration Co., E. Rockaway, Long Island, in the New York metropolitan area.

"Commercial prospects are 10 to 20% better this year, and there is an increasing volume of replacement business which we believe can be more profitable than new installations, that is if the brief case operators don't move in and cloud the situation," is the report from Harris Bros. Refrigeration Co., Kansas City.

Two dealers — Aldrich Air Conditioning in Rapid City, S. D., and Tom McIntyre Plumbing Supplies Co. in Columbus, Miss., said that activation of SAC airbases in their immediate area would improve both the residential and commercial air conditioning prospects.

"Prospects for the Phoenix area look to be as great or better than last year, with the upward trend seen in residential and small commercial jobs," is the prediction of Arizona York Refrigeration Co., Phoenix.

"While business in general is reported slower we have more work ahead than this time last year, and have plenty of prospects. We hope and believe we will have a better year than last year." That's the word from A. C. Rochat Co., Knoxville, Tenn.

"Trend is upward because of increased industrial development in this area," reports Charles L. Dugan of Krauss Air Conditioning of Tampa, Inc., Tampa, Fla.

Stating that prospects for 1958 look "good," a New York City contractor specializing in commercial work comments that "so far prices seem to be more in line for good installations. Last year at this time there was a trend toward getting a job at any price. We believe that serv-

(Continued on next page)

CUT YOUR FILTER INVENTORY

One size fits all makes with

FREE-FLOW FILTER

WICKFORD PRODUCTS INC.
New York 13, New York

For all refrigerant and air conditioning needs . . .

PENNSALT'S COMPLETE LINE OF CONTROLLED-PROCESS ISOTRON REFRIGERANTS

in the quantities you want from a pound to a tank car

ISOTRON REFRIGERANT 11 . . . low vapor pressure refrigerant. Available in 100- and 200-lb. non-returnable drums, ton containers, tank trucks and tank cars.

ISOTRON REFRIGERANT 12 . . . moderately high vapor pressure refrigerant for most types of refrigeration and air conditioning equipment regardless of size. Available in 15-oz. cans, 10-, 25- and 145-lb. cylinders, ton containers, tank trucks and tank cars.

New in the Line . . .

ISOTRON REFRIGERANT 22 . . . high vapor pressure refrigerant for use in room-size air conditioners, domestic freezers and many larger units. Available in 2-lb. cans, 9-, 22- and 125-lb. cylinders, ton containers, tank trucks and tank cars.

ISOTRON REFRIGERANT 113 . . . very low vapor pressure refrigerant for multi-stage cooling systems using centrifugal compressors and in brine chilling systems. Available in 100- and 200-lb. non-returnable drums, ton containers, tank trucks and tank cars.

ISOTRON REFRIGERANT 114 . . . moderately low vapor pressure refrigerant widely used in drinking water coolers. Available in 1-lb. cans, 10-, 25- and 150-lb. cylinders, ton containers, tank trucks and tank cars.

ISOTRON refrigerants meet or surpass all accepted industry standards. Get economy-priced, quality products. Order Isotron from your refrigeration wholesaler

(Continued from preceding page)
ice problems due to poor or 'money saving' installations have made companies realize the need for a fair price for a job."

"Our prospects look better than last year, although last year was very good," states N. V. Bearden, Desert York Co., Las Vegas, Nev. "Years ago, our company determined what our absolute minimum mark-up had to be and we have held fast to this through a boom period in this town on building construction, for the last three or four years.

Price Becoming Less Important to Buyer

"During this period, a good portion of this construction was speculative, with the contractors and builders taking the lowest price, regardless. The temperatures are extreme in this area and mis-applied and poorly installed jobs are being noticed by the public. To sum it up, price within reasonable bounds is not the question any more, it is the quality of the equipment, quality of the company, and service."

"1958 should approach 1956 volume if summer weather is normal and extends to Sept. 15," says Thomas Ryan of Murphy & Miller, Inc., Chicago.

"Volume should double. More tendency to adequate heating systems,"—Bell Electric Co., Ft. Lauderdale, Fla. "We expect to do approximately 35% over 1957"—Ernest Haupt Refrigeration, Teaneck, N. J. "Prospects better. More quality homes"—Fahnestock, Inc., Wichita, Kan. "Residential looks up considerably"—Baker-McClintic Co., Columbia, Mo. "We have already sold several central units to be added to existing heating jobs" —Walker Heating Co., Memphis, Tenn.

Some of the responses to the survey which put some doubt on prospects for improved business in 1958 made these points:

"Our backlog at present time indicates less business in 1958," states a Lima, Ohio dealer.

"Threat of lower automotive sales and labor trouble overshadowing entire outstate Michigan market," says a Lansing, Mich. outlet.

A California dealer says "1958 looks less encouraging from the profit angle. Too many package units are being sold by service stations, plumbers, one man electrical shops, and such."

Another California dealer, L. T. Worness of Pomona, says that "room air conditioners being sold below our wholesale price have forced us out of the room unit business," but adds that he is making "fair profits on residential jobs in new construction, good profit in remodeling work."

A leading Dallas outlet says "we'll do well to equal 1957, but we do expect a slightly better profit margin."

"We would not meet the kind of prices in 1957 that would keep us from doing a good job, so we stopped our general bidding and just took the good jobs, which were fewer, but profitable, therefore our sales dropped way off. This year looks the same." So say Frank Bader of Bader's Sales & Service, Inc., Highland Park, N. J.

In February the NEWS conducted a survey among several hundred air conditioning dealers, contractors, and distributors as to their prospects for 1958, and their opinions on certain phases of the air conditioning business.

So many excellent comments were received that it has been decided to publish the results of the surveys, and the individual comments, in three instalments. This first instalment covers the contractors' evaluation of their sales prospects in 1958, and the part of the market to which the contractors will give increased attention this year. It also includes a tabulation of the answers to the specific questions asked in the survey.

The second instalment will contain the dealer and contractor opinions of various types of promotion—both at the dealer level and at the manufacturer level.

The third and final instalment will include the answers to such questions as "what do you consider to be your biggest obstacles to air conditioning sales?" and "what percentage of the air conditioning jobs that you sell, go at a price that gives you a fair profit?"

Answers to the question "Are you planning to put more effort into any of the various categories of air conditioning (room units, central residential, commercial packaged, large built-up systems, or automotive) brought forth some interesting responses.

FHA Attitude May Boom Residential Cooling

"Our push will be slanted toward the residential market, existing homes," says Frank B. Self, A & M Supply Co., Inc., Ft. Worth. "New FHA attitude toward air conditioning gives great impetus to homeowner to add central air conditioning or face obsolescence of the house. Existing homes can be sold without competitive bidding as is normally the case on new construction or open bids for commercial work."

Murphy & Miller, Inc., Chicago, will put more emphasis on large built-up systems, "where our facilities, experience, and manpower should help build volume. The small shops in packaged air conditioning are reducing earnings."

Aldrich Air Conditioning, Rapid City, S. D., will put more effort on central home cooling because of increased public acceptance and easier financing, but Harris Bros. Refrigeration Co. in Kansas City will concentrate on commercial installations and replacements because these categories show more promise.

Walter McCarty of McCarty Bros. Equipment Corp., River Forest, Ill., sees a trend toward larger engineered installations and will put some emphasis on that category.

Others who will concentrate on the industrial and commercial fields, gave reasons as follows:

"Aiming at industrial and machine shop markets, and replacement business, because of the large potential," Comfort, Inc., Oklahoma City.

(Concluded on next page)

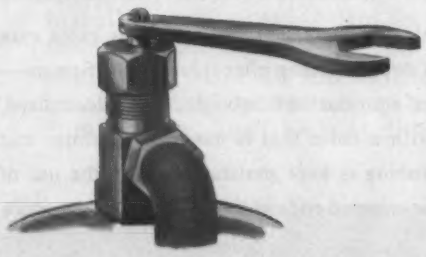
. . . new dual-purpose

ISOTRON®

Cylinder Wrench

Use the Isotron Wrench On Cylinder Cap Fittings

Use the Isotron Wrench As Cylinder Valve Stem Handle



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Looks Great for '58

70% of Dealers, Contractors Surveyed by NEWS Expect Rise In Air Conditioning Sales

82% Will Put More Effort Into at Least One Market

The following tabulation covers part of the results of the survey made by the NEWS among the air conditioning dealers and contractors, covering business prospects, promotion methods, and industrial problems. This tabulation covers answers to the first two questions in the survey. Answers are given as a percentage of the total replies.

1—How do your 1958 air conditioning prospects look in comparison with what you did last year? *Better 70%; Same 20%; Poorer 10%.*

2—Are you planning to put more effort into any of the air conditioning categories this year? *Yes 82%; No 18%.*

Which categories are you going to put more effort into?

Residential	*32%*	*Room Units*	*3%*
Commercial	*13%*	*Automotive*	*1%*
Industrial	*16%*		

(Continued from Page 1)

conditioning this year, since he feels the degree of success is related to the degree of effort. That he means it is evidenced by the notation on his reply "Please pardon my delay—I have been out selling!"

"Last November and December we were looking forward to a much smaller volume in 1958," says Walter McCarty, McCarty Bros. Equipment Corp., River Forest, Ill., "however, with the activity we have had during January, it looks like '58 will be as good or even better than '57. We are keeping our organization flexible and at all times are ready to take advantage of any up or down trends."

Florida Moving To Central Heating, Cooling

"Prospects for this coming year look very good, the trend in Florida being to central heating and air conditioning," says Thomas J. Garrard, D & G Air Conditioning Co., Tampa, Fla. "We are concentrating our efforts toward the modernization market in existing homes."

From Kissell Refrigeration Corp. in Los Angeles comes the statement that "air conditioning for industrial applications is becoming a must in this area, and we should increase our volume by 40 to 50% in all categories except window units. Air conditioning of existing office buildings should be a big factor in this market in 1958."

The "very good crop prospects in western Kansas" and a "better dealer organization" make 1958 air conditioning prospects look brighter for R. B. Gage of Air Conditioning Supply, Inc. (wholesale) and Gage Plumbing & Heating Co., Inc. (retail), Salina, Kan.

Customers Seek Better Installations

"More prospects, inquiries, and jobs than this time last year, and customers who want and will pay for a better job," have things looking up for George Pritchard of the Mader Heating & Air Conditioning Co., Lakeland, Fla.

"All prospects are 'good' with the possible exception of commercial package units," asserts Leonard Morris, Five Towns Refrigeration Co., E. Rockaway, Long Island, in the New York metropolitan area.

"Commercial prospects are 10 to 20% better this year, and there is an increasing volume of replacement business which we believe can be more profitable than new installations, that is if the brief case operators don't move in and cloud the situation," is the report from Harris Bros. Refrigeration Co., Kansas City.

Two dealers — Aldrich Air Conditioning in Rapid City, S. D., and Tom McIntyre Plumbing Supplies Co. in Columbus, Miss., said that activation of SAC airbases in their immediate area would improve both the residential and commercial air conditioning prospects.

"Prospects for the Phoenix area look to be as great or better than last year, with the upward trend seen in residential and small commercial jobs," is the prediction of Arizona York Refrigeration Co., Phoenix.

"While business in general is reported slower we have more work ahead than this time last year, and have plenty of prospects. We hope and believe we will have a better year than last year." That's the word from A. C. Rochat Co., Knoxville, Tenn.

"Trend is upward because of increased industrial development in this area," reports Charles L. Dugan of Krauss Air Conditioning of Tampa, Inc., Tampa, Fla.

Stating that prospects for 1958 look "good," a New York City contractor specializing in commercial work comments that "so far prices seem to be more in line for good installations. Last year at this time there was a trend toward getting a job at any price. We believe that serv-

(Continued on next page)

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in the quantities you want from a pound to a tank car

ISOTRON REFRIGERANT 11 . . . low vapor pressure refrigerant. Available in 100- and 200-lb. non-returnable drums, ton containers, tank trucks and tank cars.

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New in the Line . . .

ISOTRON REFRIGERANT 22 . . . high vapor pressure refrigerant for use in room-size air conditioners, domestic freezers and many larger units. Available in 2-lb. cans, 9-, 22- and 125-lb. cylinders, ton containers, tank trucks and tank cars.

ISOTRON REFRIGERANT 113 . . . very low vapor pressure refrigerant for multi-stage cooling systems using centrifugal compressors and in brine chilling systems. Available in 100- and 200-lb. non-returnable drums, ton containers, tank trucks and tank cars.

ISOTRON REFRIGERANT 114 . . . moderately low vapor pressure refrigerant widely used in drinking water coolers. Available in 1-lb. cans, 10-, 25- and 150-lb. cylinders, ton containers, tank trucks and tank cars.

ISOTRON refrigerants meet or surpass all accepted industry standards. Get economy-priced, quality products. Order Isotron from your refrigeration wholesaler

In February the NEWS conducted a survey among several hundred air conditioning dealers, contractors, and distributors as to their prospects for 1958, and their opinions on certain phases of the air conditioning business.

So many excellent comments were received that it has been decided to publish the results of the surveys, and the individual comments, in three instalments. This first instalment covers the contractors' evaluation of their sales prospects in 1958, and the part of the market to which the contractors will give increased attention this year. It also includes a tabulation of the answers to the specific questions asked in the survey.

The second instalment will contain the dealer and contractor opinions of various types of promotion—both at the dealer level and at the manufacturer level.

The third and final instalment will include the answers to such questions as "what do you consider to be your biggest obstacles to air conditioning sales?" and "what percentage of the air conditioning jobs that you sell, go at a price that gives you a fair profit?"

(Continued from preceding page)

ice problems due to poor or 'money saving' installations have made companies realize the need for a fair price for a job."

"Our prospects look better than last year, although last year was very good," states N. V. Bearden, Desert York Co., Las Vegas, Nev. "Years ago, our company determined what our absolute minimum mark-up had to be and we have held fast to this through a boom period in this town on building construction, for the last three or four years.

Price Becoming Less Important to Buyer

"During this period, a good portion of this construction was speculative, with the contractors and builders taking the lowest price, regardless. The temperatures are extreme in this area and mis-applied and poorly installed jobs are being noticed by the public. To sum it up, price within reasonable bounds is not the question any more, it is the quality of the equipment, quality of the company, and service."

"1958 should approach 1956 volume if summer weather is normal and extends to Sept. 15," says Thomas Ryan of Murphy & Miller, Inc., Chicago.

"Volume should double. More tendency to adequate heating systems,"—Bell Electric Co., Ft. Lauderdale, Fla. "We expect to do approximately 35% over 1957"—Ernest Haupt Refrigeration, Teaneck, N. J. "Prospects better. More quality homes"—Fahnestock, Inc., Wichita, Kan. "Residential looks up considerably"—Baker-McClintic Co., Columbia, Mo. "We have already sold several central units to be added to existing heating jobs" —Walker Heating Co., Memphis, Tenn.

Some of the responses to the survey which put some doubt on prospects for improved business in 1958 made these points:

"Our backlog at present time indicates less business in 1958," states a Lima, Ohio dealer.

"Threat of lower automotive sales and labor trouble overshadowing entire outstate Michigan market," says a Lansing, Mich. outlet.

A California dealer says "1958 looks less encouraging from the profit angle. Too many package units are being sold by service stations, plumbers, one man electrical shops, and such."

Another California dealer, L. T. Worness of Pomona, says that "room air conditioners being sold below our wholesale price have forced us out of the room unit business," but adds that he is making "fair profits on residential jobs in new construction, good profit in remodeling work."

A leading Dallas outlet says "we'll do well to equal 1957, but we do expect a slightly better profit margin."

"We would not meet the kind of prices in 1957 that would keep us from doing a good job, so we stopped our general bidding and just took the good jobs, which were fewer, but profitable, therefore our sales dropped way off. This year looks the same." So say Frank Bader of Bader's Sales & Service, Inc., Highland Park, N. J.

Answers to the question "Are you planning to put more effort into any of the various categories of air conditioning (room units, central residential, commercial packaged, large built-up systems, or automotive) brought forth some interesting responses.

FHA Attitude May Boom Residential Cooling

"Our push will be slanted toward the residential market, existing homes," says Frank B. Self, A & M Supply Co., Inc., Ft. Worth. "New FHA attitude toward air conditioning gives great impetus to homeowner to add central air conditioning or face obsolescence of the house. Existing homes can be sold without competitive bidding as is normally the case on new construction or open bids for commercial work."

Murphy & Miller, Inc., Chicago, will put more emphasis on large built-up systems, "where our facilities, experience, and manpower should help build volume. The small shops in packaged air conditioning are reducing earnings."

Aldrich Air Conditioning, Rapid City, S. D., will put more effort on central home cooling because of increased public acceptance and easier financing, but Harris Bros. Refrigeration Co. in Kansas City will concentrate on commercial installations and replacements because these categories show more promise.

Walter McCarty of McCarty Bros. Equipment Corp., River Forest, Ill., sees a trend toward larger engineered installations and will put some emphasis on that category.

Others who will concentrate on the industrial and commercial fields, gave reasons as follows:

"Aiming at industrial and machine shop markets, and replacement business, because of the large potential," Comfort, Inc., Oklahoma City.

(Concluded on next page)

. . . new dual-purpose

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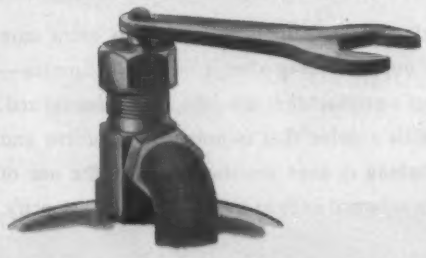
Cylinder Wrench

Use the Isotron Wrench On Cylinder Cap Fittings

Use the Isotron Wrench As Cylinder Valve Stem Handle



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Air Conditioning Firms Indicate Where The'll Put Emphasis In Seeking Business

(Continued from preceding page)

"Larger systems. Cannot compete with non-union organizations. Fewer service problems, better margins." A Houston air conditioning and heating dealer.

Going After Big Jobs

"Big jobs with multiple commercial package type installation." Bell Electric Co., Ft. Lauderdale, Fla.

"We'll put more efforts on large built-up systems. Manufacturers of residential and commercial packages have demoralized this market by dumping old models and encouraging dealers to sell at low mark-ups." A Dallas outlet.

Among those who will put more effort on the central residential market, the following comments are pertinent:

"The market is there and generally individuals have not felt the business decline as much as commercial establishments." Columbus Refrigeration & Heating Co., Columbus, Ohio.

"Central residential, primarily because we can utilize our refrigeration know-how and we won't have to compete with the appliance dealer, plumber, or sheet metal shop, unless of course, they also have a refrigeration department." O. B. Lund Co., Havre, Mont.

"Combination forced air heating and air conditioning systems, because they are the most popular in our area." A Pennsylvania dealer.

"Central residential, mainly the existing home market. You get a chance to do a selling job in this field, with more profit." Walter Heating Co., Memphis.

Sees Residential as Less Competitive Field

"Residential, because people are asking more about it, and there's less competition." Ratliff Sheet Metal Works, Brookhaven, Miss.

"Central residential because it improves property values while providing comfort and health benefits." James A. Foley, Inc., Toledo.

And Air Conditioning Maintenance Co. says it will push "Automotive! We are filling a vacuum. We shall be the only company qualified and prepared to install and service cooling systems on Rolls-Royce, Merceres-Benz, and Jaguars in our territory."

(To Be Continued)

'Heating Ventilating, Air Conditioning Guide 1958' Offers Additions, Revisions

NEW YORK CITY — The *Heating, Ventilating, Air Conditioning Guide 1958,* containing a 1,272-page Technical Data Section and a 503-page Catalog Data Section, is the 36th and largest annual edition published by the American Society of Heating & Air-Conditioning Engineers.

Revisions and additions have been made in 14 chapters of the Technical Data Section. They include addition of both a description and a design method for high velocity air duct systems; an enlarged section on the heat pump; new information on exhaust hood performance and design for hot and cold processes; a simplified presentation of industrial drying principles, calculations, and system design; extension of data on heavy fuel oils and their use, with pre-heating, in automatic fuel burning equipment.

Also, new data on heat gain through glass block used in skylights, requirements for shading glass, and basic principles involved in calculating heat flow through glass areas; a general revision of the chapter on radiators, convectors, baseboard, and finned-tube units and addition of new data on their ratings, and performance; a revision of ranges of capacity for electrical heating units and a method of determining operating cost for these units; an enlarged section on performance and testing of air cleaners; extension of list of allowable concentrations of air contaminants; an increased number of codes and standards.

THe general format of the text is in seven sections as in earlier editions: "Fundamentals," "Human Reactions." "Heating and Cooling Loads," "Combustion and Consumption of Fuels," "Systems and Equipment," "Special Systems," and "Instruments and Codes."

The Catalog Data Section follows the pattern of other editions, but the equipment data has been brought up to date. The pages contain both descriptive and performance information as well as application data.

Both the Technical and Catalog Data Sections are carefully indexed throughout. The ASHAE Psychrometric Chart, 24 by 32 in., is included in a pocket in the back cover.

Single copy price of the new edition is $12. Society headquarters are at 62 Worth St., New York 13, N. Y.

Gibson Names Tipton Operations Vice Pres

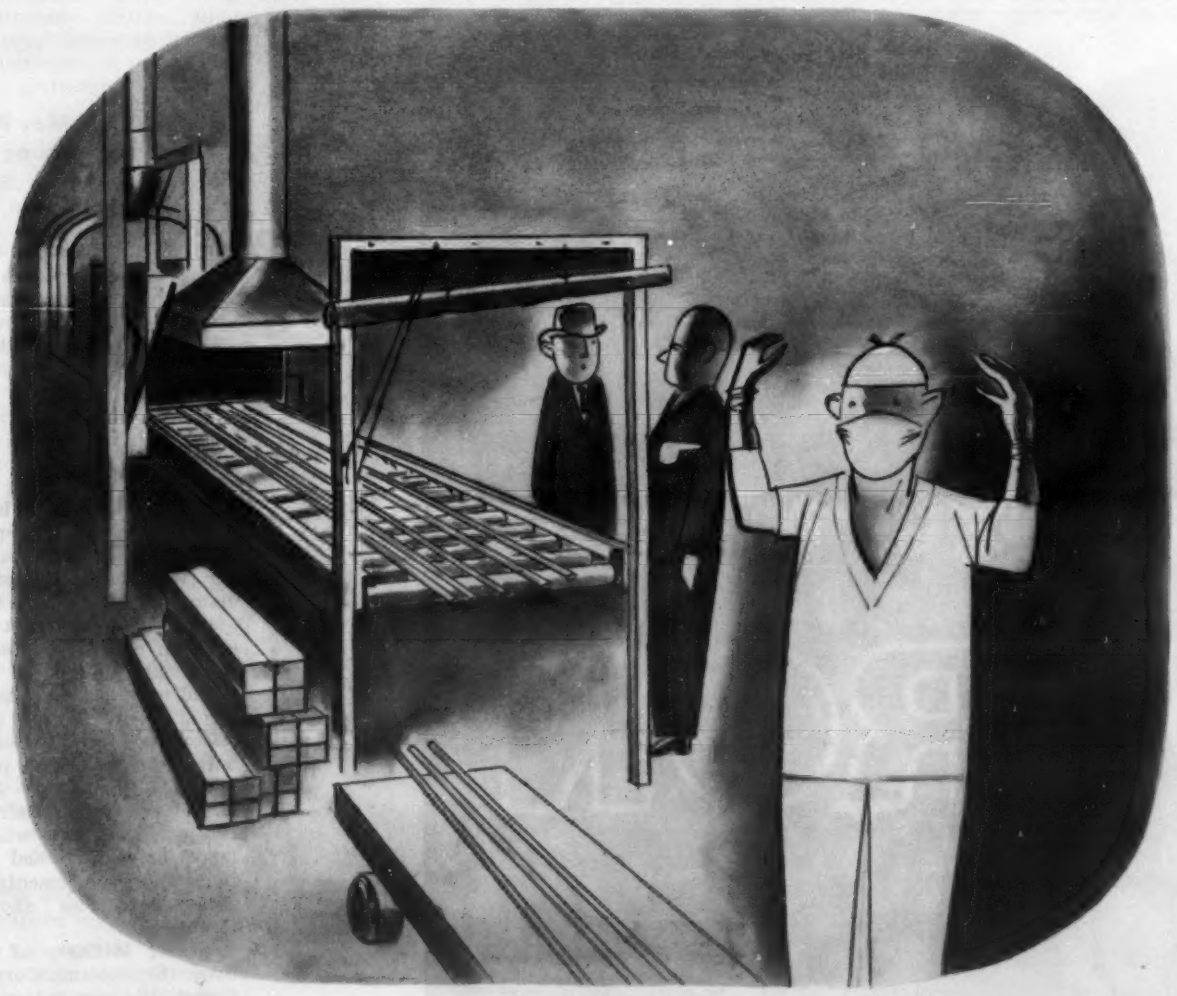
GREENVILLE, Mich.—C. J. Gibson, Jr., president of Gibson Refrigerator Co., announced that C. M. Tipton, formerly vice president in charge of manufacturing, has been named vice president - operations.

C. M. Tipton

S. E. Sweet, executive vice president, has resigned, reportedly to accept a position with Whirlpool Corp. Gibson's office will handle the executive vice president's duties.

In his new capacity Tipton will be responsible for all manufacturing departments, service department, and personnel and community relations department.

Other departments of the company, including the Gibson sales department, headed by W. C. Conley, vice president in charge of Gibson sales; the brand sales department, under E. W. Ellingen; and the engineering department, directed by H. E. Rosebrook, vice president of engineering, report directly to the president, according to the announcement.



"When your tubing comes out of this furnace Mr. Petrie, it is bright, deoxidized and absolutely clean. As you can see, we do everything possible to keep it that way."

A modern new electric annealing furnace—plus extra care in the handling of copper tubing after it leaves the furnace—is your assurance of a product that is bright, clean, deoxidized, dehydrated and with a color that is unusually uniform and permanent. The tubing is kept moisture free by the use of capped, plugged or crimped ends as the customer may specify.

Originators and sole makers of METALFLO tubing

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METALFLO LOCKSEAM COIL STRIP SEAMLESS TUBING TUBULAR PARTS

'Changes Air Conditioning Has Wrought'

Overseas Cooling Has Become Daily Necessity, Export Official Says

AUBURN, N. Y.—"The world is getting to be a cooler and far more agreeable place to live in," stated Heinz O. Spier, export manager of Remington Corp., upon returning to the Remington plant recently on completion of a second trip around the world within one year.

The changes which air conditioning has wrought in the tropical countries of the world have only become truly effective in the last few years, during which time air conditioning in overseas areas has slowly moved from the category of luxury equipment to that of a daily necessity, he commented.

Among installations mentioned by Spier as indicating awareness to the benefits of air conditioning are those in the "Horse-Hospital" of the Hongkong Jockey Club where race horses are kept cool and comfortable during post surgery convalescence; in a U. S. Baptist Mission outpost in Penang, Malaya; and "the cooling of just about every area inhabited by humans in the oil-rich Persian Gulf areas, where air conditioning runs the gamut from sheiks' palaces to workers' barracks."

Spier's second world trip again included Hawaii, the Philippines, Hongkong, Vietnam, Cambodia, Malaya, Singapore, India, Pakistan, Iran, Kuwait and other Middle Eastern, African, and European countries.

Remington's export manager stated that the company would have an extensive line of special units available this year designed solely for tropical 50-cycle markets. Overseas licensing arrangements of Remington are also being expanded, in view of the industrial development taking place in many overseas areas, he said.

Johnson Named To Head Cooling Tower Institute

DENVER — Karl E. Johnson was elected president of the Cooling Tower Institute for 1958 during the association's annual meeting held here.

Johnson, who is vice president and general manager of J. F. Pritchard & Co. of California (with headquarters at Kansas City, Mo.) succeeds Paul R. Hoffmann, president of Lilie-Hoffmann Cooling Towers, St. Louis.

Other CTI officers elected were vice president Denis E. O'Neil, manager of the cooling tower department of Foster Wheeler Corp. at San Mateo, Calif.; secretary, Forrest B. Reed, vice president and sales manager, The Marley Co., Kansas City, Mo.; and treasurer, Ennis C. Smith, manager of the cooling equipment division of Hudson Engineering Corp., Houston, Texas.

The CTI executive board also includes Hoffmann and James P. Wiseman, president of Fluor Products Co., Whittier, Calif. Raymond C. Kelly continues as executive manager, with staff headquarters at 420 Emerson St., Palo Alto, Calif.

The CTI field service department is based at Houston under the supervision of field engineer James L. Willa.

Two Ventilator Mfrs. Join Air Moving Group

DETROIT—The Air Moving & Conditioning Association here has elected Jenn-Air Products Co., Indianapolis, and E. Van Noorden Co., Boston, to membership in the association.

Both companies are manufacturers of power roof ventilators, products included in the association's new program to provide dependably rated air moving equipment.

200 More Due

40 Cleveland Area Homes Conditioned by Heat Pumps

CLEVELAND — About 40 homes in this area are now using heat pumps, according to the Electrical League of Cleveland.

Two home developments now under construction, each of 100 homes, will use the heat pump for year-round air conditioning, Electrical League officials added.

One development is in Geauga county, the other in western Cuyahoga.

Distributor Expands

NEW YORK CITY—Opening of the firm's first suburban unit in White Plains has been announced by Edison Cooling Systems, Inc., local General Electric Co. air conditioner distributor.

WHAT . . WHEN . . WHERE
— A Guide to Coming Events of Interest

Gas Appliance Manufacturers Association Annual Meeting
March 31-April 2,
The Greenbrier, White Sulphur Springs, W. Va.

Air-Conditioning & Refrigeration Institute Annual Meeting
May 4-7, The Homestead, Hot Springs, Va.

National Restaurant Association Convention, Exposition
May 5-9, Navy Pier, Chicago.

Western Air Conditioning, Heating, Ventilating and Refrigeration Exhibit
May 7-11, Shrine Exposition Hall, Los Angeles.

Edison Electric Institute Annual Convention
June 9-12, Boston.

Oil-Heat Institute of America Convention, Exposition
June 9-13, New York City.

American Society of Heating & Air-Conditioning Engineers and American Society of Refrigerating Engineers JOINT MEETING
June 23-25, Leamington hotel, Minneapolis.

National Association of Plumbing Contractors Convention
June 30-July 3, Pan Pacific Auditorium, Los Angeles.

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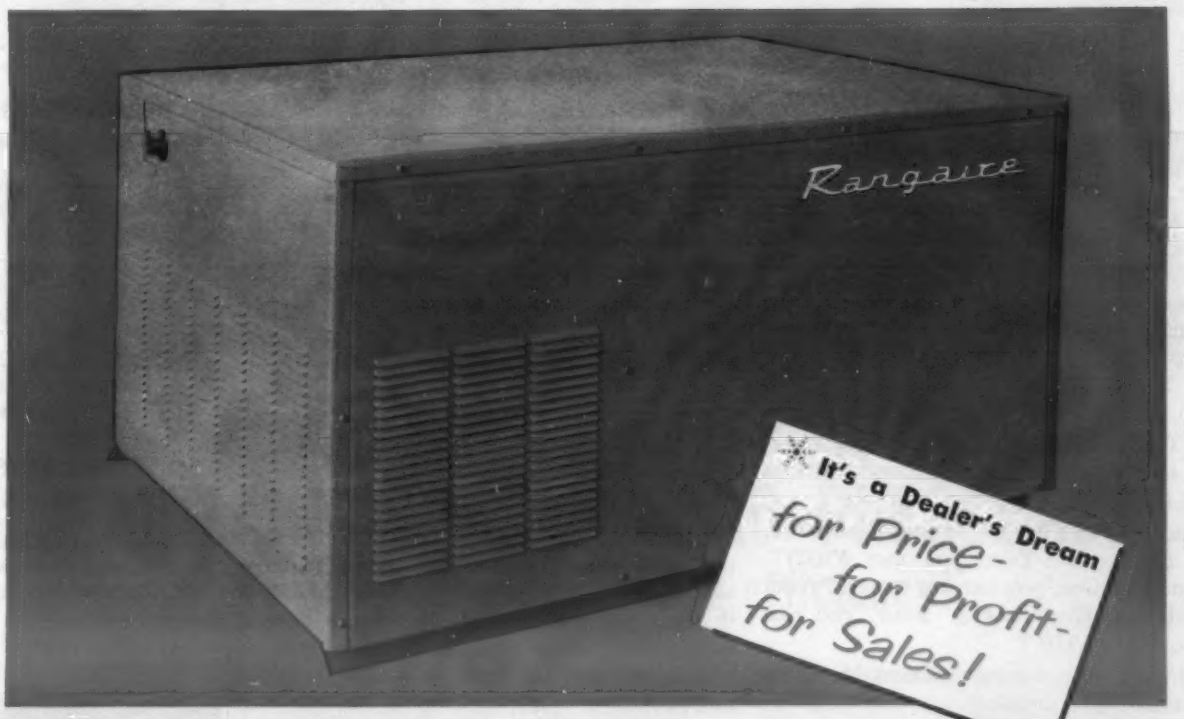

Rangaire Has the Extras that Mean More Sales

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A Complete Line Of Units To Fit Every Need
A Price To Fit Every Budget
Easy Installation — Completely Packaged
Color Harmonized — Cabinet Blends Into Surroundings
All Components, Extra Large Capacity
Proved In Nation's Heat Belt
Extra Long Life
Factory Guaranteed

A Rangaire dealer-franchise makes good sense because Rangaire dealers have what it takes for sales.

Get the Facts-

Fill out and mail the coupon today!

COBELL INDUSTRIES INC.
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Please send complete information on Rangaire franchise.

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They'll Do It Every Time

by

Jimmy Hatlo

THERE REALLY ISN'T ENOUGH WORK FOR TWO SECRETARIES, MISTER BIGDOME—AND I'VE BEEN DOING ALL OF ROSIOLA'S WORK SINCE SHE GOT ME THE JOB HERE—IT SEEMS SUCH A WASTE—
HARRUMPH! RIGHT! YES, INDEED! I'VE BEEN THINKING OF CUTTING DOWN—TAKE A MEMO TO THE OFFICE MANAGER—
STILLETA'S BEEN AFTER ROSIOLA'S JOB FOR MONTHS AND FINALLY SUCCEEDS IN KNIFING HER OUT OF THE FIRM ALTOGETHER—
SO WHO PLAYS CHIEF MOURNER WHEN THE AXE IS DROPPED? RIGHT YOU ARE—
I JUST CAN'T UNDERSTAND IT—
LETTING YOU GO?! THAT BIGDOME OUGHT TO BE TARRED AND FEATHERED!! IT'S A CRYING SHAME! I FEEL LIKE QUITTING RIGHT NOW! THIS IS TERRIBLE—OH, DEAR—
DIDN'TJA HEAR STILLETA'S TWO NIECES ARE COMIN' TO WORK HERE?
I KETCH!
THANX AND A TIP OF THE HATLO HAT TO "RIOT SQUAD" NASHVILLE, TENN.
1-30

Good Advice to Every Executive: Crisis A Day Keeps Profits Away

DON'T GROW OLD—grow up! That's the advice Professor Laurence J. Taylor gives harassed businessmen. "You have nothing to fear except the crises you generate yourself," he confirms.

Dr. Taylor declares that a naturally human fear and misunderstanding of associates and competitors is an American business malady. And those fears cause self-induced crises, especially in small business enterprises.

"A crisis a day keeps the profits away," he phrases. "Competitors aren't ogres. They're human, too. Just like you. Pretty good guys, once you get to know them. Let's become MATURE about competition."

Maturity, many of us tend to believe, is a physical process—the time when we stop growing at both ends and bulge in the middle.

It is the time when our hairlines rise and chests fall. It is a moment when we hit some mythical calendar point — the frightening forties, the frustrating fifties, or the time when we fear that bright young fellows are impatient to push us out into oblivion.

Dr. Taylor describes four basic reactions to this sort of stress—which he categorizes as the 4-F Club.

"One, you can FEAR a tough situation. That's not good. Two, you can FIGHT. That's bad. Three, you can try to FLY from the problem. Even worse. Four, you can learn to FACE UP."

And that's the *mature* reaction. Maturity is psychical, not physical.

Fear makes us concentrate on ourselves. It is not a stimulus to learning, obviously. Actually it inhibits our ability to think.

Fighting prevents an individual from maturing emotionally, and makes it difficult if not impossible for him to meet problems and solve them in an objective manner. Same deal for "flying."

Right off the bat, psychologists recommend, we should determine what we expect from life—and then reduce our expectations 200%—"to provide a safe margin for achieving happiness despite bad luck and our own overoptimism."

That isn't surrender or making the best of a bad bargain. It's reality.

The mature attitude includes progressively lessened expectations, steadily increased knowledge, and growing self-confidence in one's ability to accept responsibility and get things done, according to business psychologists.

Next, that "face up" attitude includes a sensible perspective about little things—the everyday emergencies we face in business or at home.

A mature response to these minor emergencies can make a world of difference in one's attitude to truly important big issues.

"Decisions, decisions, decisions."

For example, how do you react when you know you've made a blunder or tried something and failed?

Do you sulk, do you shift the blame to a subordinate (or to your boss)? Do you minimize the incident, or blow it up out of all proportion?

If so, you should learn to distinguish important issues from those which are trivial or not worth your worry, time, and effort.

Growing up mentally and emotionally is a great adventure. Achievement of maturity gives you power to apply your learned understanding to the investigation of problems entailed in your business, problems about people who work with you, and problems involved with your community, nation, and the huge wide world.

"Don't hope to do a perfect job," adds Dr. Taylor. "Even my wife's husband isn't perfect, I hear. You may want your business to go along with machined smoothness, but it never will. Maturity doesn't mean smooth sailing with every voyage. It does mean an ability to keep upright in every kind of storm.

"Seek to surround yourself with other mature individuals if you would erase gnawing fears of incompetency, while facing a backbreaking load of present problems. In maturity there's balance and self-confidence."

Another sensible bit of advice from Dr. Taylor:

Develop a sense of humor—then you'll achieve a sense of perspective. Lincoln said, in a time of crisis: "If I did not laugh, I should die."

Today's overworked executives and their worried employes need that kind of perspective—a sense of humor and a sensitiveness to human values.

It's a calm, sensible attitude which will bring balance into their lives and to the corporations for which they work.

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Los Angeles, 4710 Crenshaw Blvd., AXminster 2-9501, Justin Hannon

Member, Audit Bureau of Circulations. Member, Associated Business Publications.

VOLUME 83, NO. 13, SERIAL NO. 1,514, MARCH 31, 1958

"A newspaper conducted on the true and natural principles of such a publication ought to be the register of the times, and faithful recorder of every species of intelligence. It ought not to be engrossed by any particular object, but, like a well-covered table, it should contain something suited to every palate."—*John Walker.*

HENDERSON SAYS, 'AMEN' TO PROFITS EDITORIAL

Westinghouse Electric Corp.
Staunton, Va.

Editor:

SUBJECT: "Down-to-Earth Suggestions For Air Conditioning Profits" March 10, 1958 Editorial.

REACTION: AMEN!

BRUCE D. HENDERSON,
Vice President

SOUTH AFRICAN FIRM WANTS COOLING LICENSE

Department of Commerce
34th St. and Convention Ave.
Philadelphia 4, Pa.

Editor:

We have received a letter from: Leemans Bros. (Pty), Ltd., P. O. Box 1177, Cape Town, Union of South Africa, who are interested in the manufacture under license of air conditioning units in South Africa. We do not know of any company that would be interested in having their equipment made in South Africa, and take the liberty of asking if you know of any company that would be interested in opening correspondence with Leemans Bros.

If you have any information you can send to us we will appreciate it.

JAMES R. BALLANTINE,
Manager-Foreign Trade Bureau

(Editor's Note: Anyone interested in such a licensing agreement with this firm is requested to contact the Philadelphia Department of Commerce.)

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Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, heating, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only $6.00 per year, 52 issues (U.S. and Canada). Foreign: $10.00 per year.

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Soldered Joint Failures

Deems 'Overwhelming Number' Due To Improper Joint Preparation, Mainly via Dirt; Explains Safety In Acetylene Cylinder Design

By Frank J. Versagi

TORONTO, Ont., Can.—"The overwhelming number of failures in soldered joints is due to improper joint preparation. The greatest single cause of failure is dirt."

These points were stressed by W. J. Brown, distributor sales manager of Linde Aire Products (Canada) in his talk on "Soldering and Leak Detection with Air Acetylene Flame" before the 19th annual convention of the Refrigeration Service Engineers Society of Canada.

Joins Sheet Metal By Soldering

Pointing out that most refrigeration servicemen are familiar with the use of the air-acetylene flame in joining copper tube, Brown showed a movie which depicted the use of solder and the flame for such other practical uses as fixing leaky pails, joining sheet metal, fixing rain carrying equipment, auto bodies, and removing paint.

"While air comes free," Brown said, "acetylene does not exist in nature and must be man made." He outlined briefly the production of calcium carbide from limestone and coke, and the subsequent generation of acetylene from the calcium carbide and water.

Some acetylene is now being produced as a by-product in the production of polyethylene plastic in refineries.

Brown explained the safety considerations which go into the design of an acetylene cylinder. "An acetylene cylinder is nothing at all like a regular gas cylinder, say for oxygen," he said. "Strike a cylinder of oxygen; you won't get that same ringing sound when you strike an acetylene cylinder.

Acetylene Dissolved During Transit

"The reason for this is that the acetylene cylinder is not hollow. Instead, it is packed with a porous material and acetone which has the ability to absorb 25 times its own volume of acetylene. Therefore, acetylene is actually dissolved during transit."

The specially designed cylinders are approved by the Interstate Commerce Commission in the States and the Board of Transport Commissioners in Canada, he said.

The trapped or dissolved gas frees itself as it is drawn off from the cylinder. The limit of withdrawal is about one-seventh of the cylinder contents per hour—an amount which is ample for most work, Brown continued.

"In very large heating jobs, it may be necessary to manifold several cylinders together.

"Like all cylinder gases, acetylene should not be stored near a heat source. The gas has extremely wide explosive limits —2.5% to 82% by volume with air. For this reason it is mandatory to store it in ventilated rooms.

"Never attempt to transfer acetylene from one tank or cylinder to another," Brown cautioned. "This is dangerous for several physical and chemical reasons."

He explained the operation of the typical regulating valves supplied on acetylene cylinders and stated that for every 10° drop in temperature, the pressure of acetylene drops about 25 p.s.i.

'Shows Less P.S.I. On Very Cold Day'

"Thus on a zero day," he continued, "the tank may show only 100-125 p.s.i. At room temperature, the same tank would show 250 p.s.i."

In answer to a question as to whether it would be advisable to heat an acetylene tank with warm water to increase its pressure, Brown cautioned against the application of heat in any form to an acetylene cylinder.

Chart 1

Flame	Temperature (°F.)	Nominal Make-Up (by volume)
Oxy-acetylene	5475	1 oxygen: 1 air
Air-acetylene	4070	6.2 air: 1 acetylene
Oxy-propane	4500	2.4 oxygen: 1 propane
Air-propane	3100	16.4 air: 1 propane

"If your working pressures are low because of a cold ambient, finish using the tank on another job indoors. In most cases, the loss of gas due to low ambient will not be significant."

Brown listed four flame temperatures for comparison. See Chart 1.

He pointed out that the flame temperatures are not to be confused with heat obtainable. "Where abundance of heat is needed, deep, soaking heat like in lead pots or samovars, and where the flame does not have to be confined to one specific point, propane and other gases give a higher B.t.u. output.

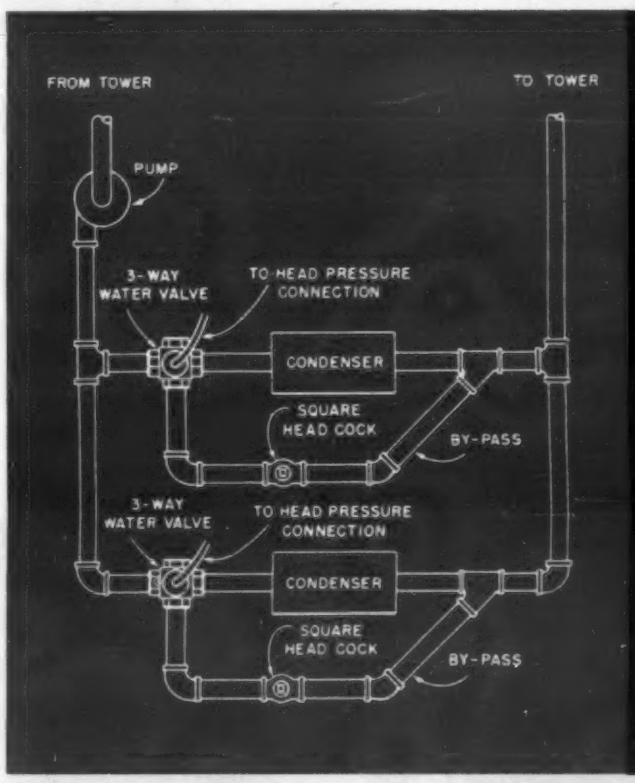
"But where localized heat—*focused* heat is needed the air-acetylene or oxy-acetylene flame is best," he stated.

Recommends Oxy-Acetylene Flame In Silver Soldering

The oxy-acetylene flame is recommended where extensive silver soldering is to be done, although the air-acetylene flame will do an occasional job—slower.

Briefly reviewing the use of the halide leak detector, Brown pointed out that the normal detector is sensitive to 100 p.p.m. of refrigerant gas in air.

The new "supersensitive" detector is effective down to 20 p.p.m., Brown claimed.



New Penn 3-way water valves for cooling tower service

MAINTAIN UNIFORM HEAD PRESSURES

to give maximum cooling efficiency!

DESIGNED TO ASSURE MOST ECONOMICAL AND EFFICIENT USE OF COOLING TOWER REGARDLESS OF SURROUNDING AIR TEMPERATURE AND HUMIDITY

Now . . . you can get full capacity and efficient operation from water-cooled commercial refrigeration and air conditioning equipment with Penn's new 3-way water valves. These pressure-actuated valves will maintain correct and uniform refrigerant head pressures regardless of the water temperature from the cooling tower.

This new water valve senses the head pressure, then its 3-way action automatically allows cooling water to flow to the condenser, to by-pass the condenser, or flow to both condenser and by-pass line as required for maximum cooling efficiency. Even when the condenser does not require cooling, water flows through the by-pass line to the tower. Thus, an adequate head of water is provided at the tower so it can operate efficiently with a minimum of maintenance on nozzles and wetting surfaces.

These Series 3246 water valves are available in ½", ¾", 1" and 1¼" sizes. Similar in design to the famous Penn 246 valve . . . all internal parts are of aluminum bronze to resist acid water attack . . . and, of course, range spring and sliding parts are not immersed in water.

Try the Series 3246 on your next cooling tower job . . . it will solve the problem efficiently and economically. Ask your wholesaler for the full story.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

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STEEL

Beam Clamps

for Mounting Hangers on I-Beams

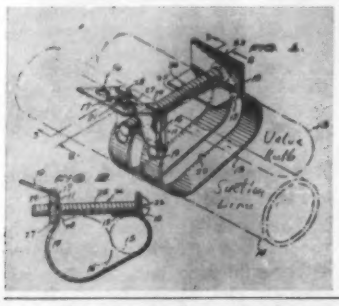
Mounts Mineralloc hangers No. 0 to No. 6 on I-Beams without necessity of drilling holes. Have ¼-20 tapped holes. Fits beam flanges up to ½" thick. Low cost. Send for literature.

MINERALLAC ELECTRIC COMPANY

25 N. PEORIA ST. • CHICAGO 7, ILL.

FOR MORE INFORMATION ON THE PRODUCTS DESCRIBED ON THIS PAGE
Write Directly to the Company—*at the Address Given in the News Item*

Has 'Easy-To-Adjust' Expansion Valve Bulb Clamp

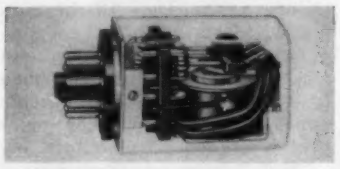


An expansion valve bulb clamp and tubing hanger combination that is said to be easy to install and adjust, and which eases installation in hard-to-get-at areas, is offered by the Commercial Machine & Welding Co., Dept. AC&RN, N. Wooster Ave., Dover, Ohio.

The three-piece clamp adjusts to various sizes of suction lines and valve bulbs, and the assembly eliminates the use of two bolts, two nuts, and two straps.

Vertical ears of the nut can be bent horizontally.

Plastic Relay Enclosure Withstands Impacts



Guardian series 1200 relay is now available in a new version called the 1210 series, according to the manufacturer, Guardian Electric Mfg. Co., Dept. AC&RN, 1621 W. Walnut St., Chicago 12.

It is encased in a dust-tight, transparent plastic enclosure.

Packages Tube Cutter, Flaring Tool Set

A tube cutter and flaring tool set has recently been added to the line of J. H. Williams & Co., Dept. AC&RN, 400 Vulcan St., Buffalo 7.

This set includes one No. 161 tube cutter, No. 161-A extra cutter wheel, and No. 162 flaring tool with compressor attachment.

These tools, packaged in a strong steel case.

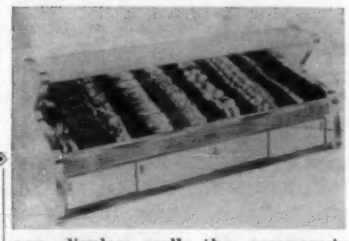
Offers 2.4 Cu. Ft. Absorption-Type Refrigerator

A luxury design absorption type "Dometic LT 230" refrigerator (2.4 cu. ft.) has been announced by Insta-Matic Heater Co., Dept. AC&RN, 89 Charles St., Providence, R. I.

It is available in gas, electric, kerosene, and electric-kerosene convertible and is offered in white, green, and pale grey decorator colors. Gas model uses a standard AGA approved safety control. Outside dimensions: 21¾ wide, 23⅝ deep, and 36¼ in. high.

Dometic features easy-to-clean all porcelainized interior, ice trays with quick release handles, a door lock, and a replaceable rubber mat which converts the refrigerator into a working table top.

Adds Two Produce Merchandisers to Line



Two models of a new "Garden Fresh" produce merchandiser have been added to the "Stadium" line produced by the Sherer-Gillett Co., Dept. AC&RN, Marshall, Mich.

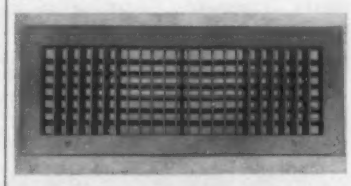
New cases, designated series 5200, feature a deeper-than-average display well, the company's new "futuramic" styling, and 34-in., "lo-front" design for easy shopping. The 5200s are available in 8 and 12-ft. lengths, with or without two types of superstructures, and in either single or double-duty styles.

Superstructures are available in 69 and 56-in. over-all heights. The mirrored superstructure, the company says, emphasizes stacked produce and creates an invitation to buy.

Can Cut 'Duralast' Filter to Any Size

A new development in filters, the "Duralast," for all room air conditioners has been offered by Duralast Filter Corp., through Duralast Filter Sales, Dept. AC&RN, 439 Burdette St., New Orleans 18.

Duralast comes in a size large enough to be used in the largest window air conditioning unit. It is a permanent filter, yet can be cut with an ordinary pair of household scissors (using the old filter as a pattern) to fit any size unit. It is rigid, needs no frame, and can be cleaned for re-use over and over again by running water through the back side.



Develops 'New Style' Louver Placement

A new style of louver placement in grilles and registers for heating and air conditioning is now available from Waterloo Register Co., Inc., Dept. AC&RN, 900 E. Lincoln St., Waterloo, Iowa.

The extruded aluminum louvers are adjustable. In the new style grilles and registers, the louvers are placed with the broad edge pivoted at the front of the grille. With any angle of setting the appearance of the grille or register is not changed.

Again in '58

BRYANT LEADS THE WAY WITH NEW

ROBO-trol

HEATING

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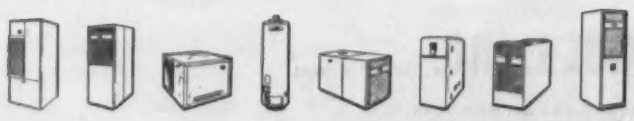
Colorful Consumer Ads!
We're sparing no expense to tell home owners about ROBO-trol! Typical of the persuasive consumer advertising is a two-page spread in full color in THE SATURDAY EVENING POST, to be read by *millions* of the very best potential customers.

A Complete Dealer Kit!
We're going all out to help Bryant dealers achieve their greatest sales-and-profit-making year. Every certified Bryant dealer will receive this kit containing newspaper mats, radio commercials, direct mail and hand-out literature, with complete instructions for their most advantageous use! Ask your Bryant distributor about the Bryant Certified "Doctor of Heating" Program.

This new Bryant electronically controlled heating system is sensational from *every* angle . . . and we're making certain that Bryant dealers will cash in on it. Powerful Bryant consumer advertising will acquaint the public with the amazing new advantages of ROBO-trol . . . and Bryant dealers will have the sales helps and promotional material to take full advantage of it! ROBO-trol provides Bryant dealers with the greatest sales-winner since 1907, when Bryant produced the *first* successful automatic gas heating system in the world. For complete information, write us today.

BRYANT MANUFACTURING COMPANY, *Indianapolis, Ind.*
Bryant Manufacturing, Ltd., Toronto, Canada



bryant

AMERICA'S FOREMOST SPECIALISTS IN RESIDENTIAL HEATING, COOLING AND WATER HEATING

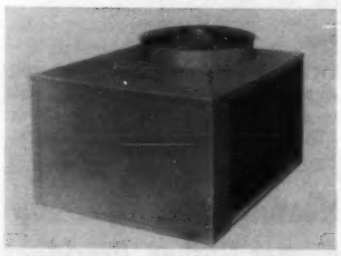
Designs Special Window for Air Conditioners

Window washing problems, encountered by air conditioner owners because the units have been permanently installed through windows with makeshift panels, are claimed to have been solved by a manufacturer of windows and doors, the F. C. Russell Co., Dept. AC&RN, Columbiana, Ohio.

All glass inserts, equipped with spring-locks for a secure fit, may be removed and washed. When the air conditioner is not in use, outside air may be brought into the room by movement of a vertical slide panel. The unit may be removed for storage and an extra glass panel slipped into the opening.

New window is designed for any make air conditioner. It eliminates unsightly panels and drafty, loose-fitting end pieces. The window provides an airtight seal that surrounds the cooling unit. This seal blocks outside cold in the winter and cuts air cooling costs in the summer.

Offers 5 to 150-Ton Packaged Cooling Towers

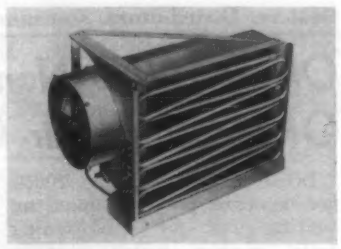


Production and availability of an entirely new packaged cooling tower in the 5 to 150-ton capacity range has been announced by Dover Mfg. Co., Dept. AC&RN, 3117 Weatherford Ave., Independence, Mo.

The new tower is named the "silLOWette" and is a counter-flow, mechanically induced draft tower with propeller fan and vertical air discharge.

SilLOWette is new both in appearance and in operational features. Tower is low in design, which allows it to hug the roof line in rooftop installations. A feature of this tower is colored side panels. The side panels of the tower are available in white or colored transite in a wide range of colors as well as in galvanized steel. Translucent side panels are available and permit interior lighting of the tower for attractive display purposes.

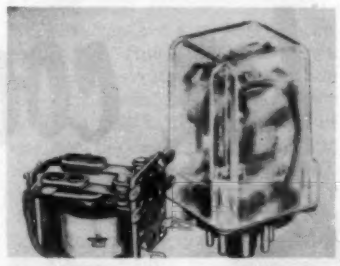
Mechanical features of the new tower include: removeable side panels that lift up and out to expose the entire interior of the tower with no bolts or screws to unfasten; air-cooled bearings set in a specially designed bearing housing which has separate air and grease lines running to the outside of the tower; all-purpose, right-angle utility sump that simplifies tower flushing, protects pumping equipment from debris and air pockets.



Develops Truck Refrigeration Blower

Newly- designed "Kold-Hold" turbo-jet blowers for truck refrigeration permit automatic defrosting without a high upswing in body temperature during the defrost cycle, according to Kold-Hold Div., Tranter Mfg. Co., Dept. AC&RN, 735 E. Hazel St., Lansing 9, Mich.

During the defrost cycle, refrigerant passes through a secondary coil while the primary coil is defrosted by natural air circulation. During the refrigeration cycle, the secondary coil defrosts. No hot gas is shot into the primary evaporator and the turbo-jet blower delivers refrigeration even during defrost.



Small Relays Are Light Weight

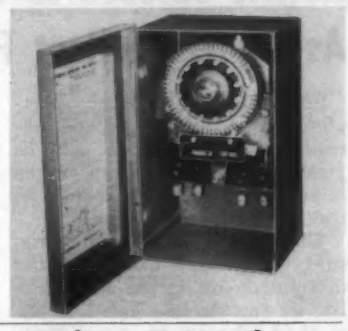
Designed for general purpose applications are frame 214 relays claimed to combine outstanding contact reliability with small size and light weight, made by Struthers-Dunn, Inc., Dept. AC&RN, Pitman, N. J.

Grade 5 melamine bonded fiberglass insulation for contact supports assures exceptional contact stability with adequate safeguard against failure resulting from temperature and humidity changes, the firm states.

Claims Time Switch Accurate 'To-the Minute'

A time switch that is claimed to offer the to-the-minute accuracy and ease of setting needed has been developed by Tork Time Controls, Inc., Dept. AC&RN, Mt. Vernon, N. Y.

The No. 4000 "Hourmaster" series is designed for all types of automatic commercial defrosting, and lends itself to short defrost cycles. Units provide easy-to-set defrost periods of from 2 to 5 minutes, adjustable in 1-minute steps, the company explained.



Soldering Iron Solders Without Using Flux

An ultrasonic soldering iron, known as the "Glennite," has been designed for soldering without flux by Gulton Industries, Inc., Dept. AC&RN, 212 Durham Ave., Metuchen, N. J.

In operation, ultrasonic vibrations break the oxide layer.

In the fabulous Americana Hotel, Miami Beach

J-E SOLENOID VALVES

Quietly and *Dependably* Control the Personalized Air Conditioning in 475 Guest Rooms

Owned and operated by Tisch Hotels, Inc., the Americana has individually-controlled air conditioning, for heating or cooling, in every guest suite. To assure quiet, dependable, personalized control of room temperatures, the air conditioning contractor (Hill York Sales Corp.) selected Jackes-Evans Solenoid Valves.

For complete satisfaction on *your* jobs also, *specify* J-E Valves. Call your wholesaler or write direct today.

Controls Division
JACKES-EVANS MANUFACTURING COMPANY
4427 Geraldine Ave • St Louis 15, Mo.

HASTINGS HOIST-IT

THOUSANDS OF USERS PRAISE THE "HOIST-IT"

ERECT A 4,000 LB. UNIT IN 57 MINUTES

SAVES MONEY, TIME, TROUBLE

- Raises up to 4,000 lbs., as high as 24 ft.
- Two men can erect a 4,000 lb. unit.
- The "Hoist-It" often pays for itself on one job.
- Completely safe. Easy to use.

HASTINGS HOIST-IT

IDEAL FOR ALL TYPES OF EQUIPMENT
Air Conditioners • Attic Units
Unit Heaters • Refrigeration Coolers

Write for Prices and Bulletin AC-38-2H

HASTINGS AIR CONTROL, INC. 3215 Leavenworth Omaha 5, Nebraska

FLOOR UNITS For CHILLED WATER

Solve Many Design And Installation Problems

HASTINGS Floor Units are ideal for existing buildings where serious disruption or excessive cost results from breaking thru heavy walls and floors for duct-work.

MODELS
Complete units as pictured — for direct discharge with 4-way air distribution grilles.
Basic units, less top section, for ducts.

CAPACITIES
Three sizes — from 3 to 15 tons. Air delivery 1200 to 5600 cfm.

COILS
All copper or aluminum fins. Highest efficiency for chilled or well water.

FEATURES
Insulated cabinets. Heating with hot water or steam. Quiet operation.

HASTINGS AIR CONDITIONING — The Fresh Air Custom

Water coil and DX air handling units—Up to 24,000 cfm. Shipments from Stock on All Sizes.

Contractors and Engineers Write For Bulletin AC-38-2W

HASTINGS AIR CONTROL, INC. 3215 Leavenworth Omaha 5, Nebraska

Electric Baseboards Use Same Wiring As Lights To Heat Portable Classrooms

SEATTLE — One-room portable frame schools of permanent appearance that can be jacked up and moved on trucks is suburban Seattle's answer to the classroom shortage.

Electric baseboard heating, said to be easy to install and disconnect, using the same wiring as for electric lights is the method chosen to heat these structures.

Each portable classroom, 30 by 30 ft., with one wall of glass, is heated with a 13 kw. Westinghouse electric baseboard system. Time clock-governed thermostats control the heat. Heating sections 2 ft. long and 7 in. high fit together to form a continuous unit that replaces the regular baseboard.

Ewing Electric of Edmonds, Wash. installed the electric heating in the portable classrooms in Redmond grade and junior high schools in the Lake Washington school district, and Chapman Electric of Renton put in the rest.

One permanent school building has also installed electric heating, finding it could be installed at a claimed cost of under 85 cents a sq. ft.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

Dealers, Distributors, Consumers

Offers 100% Non-Recourse Finance Of Heating, Air Conditioning Units

LOS ANGELES — A 100% non-recourse plan of financing heating and air conditioning units, ranges, water heaters, and other home comfort equipment was announced by Utility Appliance Corp., maker of Gaffers & Sattler products.

Ben B. Breslow, president of Utility and of Mission Appliance Corp., said the plan is believed to be the first of its kind ever offered dealers, distributors, and consumers in the United States. He said it would extend credit to those engaged in the industry and increase consumer spending at a time when it was most needed.

"Under the plan," it was explained, "no down payment is required of the consumer. Installations can be made by the dealers with no investment in the equipment. Lending agencies have no recourse against the dealer or distributor in the event of loan default by the customer, a feature unique to the Gaffers & Sattler plan.

"Leading financial institutions in the west, including California Federal Savings & Loan Association and the Bank of America, have given the plan their approval and will cooperate with Gaffers & Sattler in making three to four-year loans available at flat interest rates, 6% per annum in virtually every case.

"A national plan is being made immediately available to all Gaffers & Sattler dealers and distributors in every state except Arkansas through Allied Building Credit, Inc., also at the flat 6% per annum rate but for only the three-year period. Los Angeles area building and loan companies are offering the same terms but on a three and five-year basis.

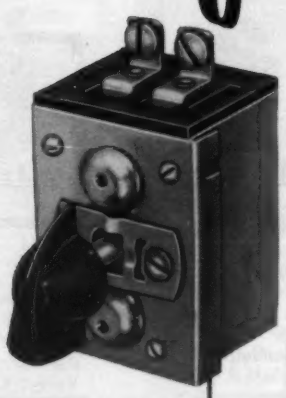
"These also include Los Angeles Federal Savings & Loan Association in Los Angeles County including Antelope Valley and in Orange, Riverside, Kern, San Bernardino, and Ventura Counties. In San Diego County, the loans will be made through Home Federal Savings & Loan Association at 7% per annum.

"Local arrangements are being made in other areas by Hilton E. Jones, Gaffers & Sattler financial consultant, who is also available to set up the plan in any dealer or distributor area on request."

Amounts of loans range from $200 to $3,500, in southern California with 36-month financing available up to $750 and 60 months' terms on loans over $750 up to maximum, the company said.

Compact, low cost, high capacity

thermostats for cooling applications

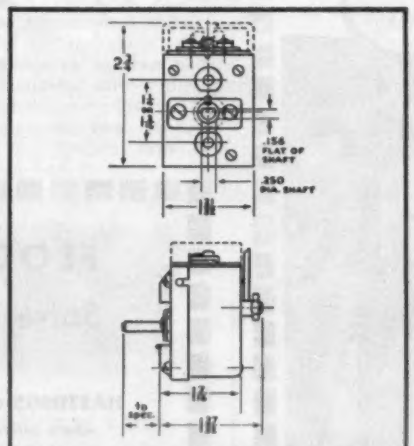


New Wilcolator Type G2 features improved, snap-action switch for higher contact ratings

With its improved, snap-action contact mechanism, the new Wilcolator G2 thermostat offers you much higher contact ratings than have hitherto been available in such a compact unit. Measuring only 2¾ x 1⅝ x 1⅞ in., it nevertheless has ample capacity for heavy duty appliances and medium industrial requirements.

Temperature differential is adjustable and can be factory set to your specifications. The G2 unit is available with Constant Cool position (motor load) where required. Contact mechanism not affected by vibration. No TV or radio interference. All steel parts heavily plated for corrosion resistance.

For complete information, write The Wilcolator Company, 1001 Newark Ave., Elizabeth, N.J. *In Canada:* Wilcolator (Canada) Ltd., 221 Evans Ave., Toronto 14, Ont. *Export Address:* Wilcolator, 1010 Schaff Bldg., 1505 Race St., Philadelphia 2, Pa.



FRONT AND SIDE VIEW TYPE G2 WITH SIDE OUTLET CAPILLARY AND TERMINAL COVER. SCREW TYPE TERMINALS.

SPECIFICATIONS

Standard temperature range: 55°F-95°F

Special temperature ranges: To customer's requirements

Switch mechanism: Single pole, double break, snap action

Motor ratings: 120 to 240 v a-c; running current—14 amp; locked rotor—60 amp

Mounting: Back of panel or in enclosure

Standard shaft: ¼ in. diam. flatted to .156 in.; length to customer's specifications

Terminals: Screw type, AMP or Arkles

THE Wilcolator COMPANY

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Heating, Cooling Group Names Gerken President

TOLEDO—William Gerken of Gerken Heating Co. has been elected president of the Toledo Heating & Air Conditioning Contractors Association here. He succeeds Kenneth Epperson.

Other new officers are: E. W. Gogolin, vice president; John Buckenmeyer, treasurer; Jack Sperling, secretary; Epperson, Carl Schmidlin, Delbert Hartz, Byron Walbolt, and Ed Mullens, trustees.

Wisconsin Contractor Group Changes Name

MILWAUKEE — Heating, Piping & Air Conditioning Contractors Wisconsin Association announced adoption of a new name after its annual convention here.

The new name—Mechanical Contractors Association of Wisconsin — better describes the "wide range of work"—everything but wiring—done by members, it was explained.

Officers elected were Thomas Brendemihl of Brendemihl & Garot, Green Bay, president, and Erhard P. Roller, E. P. Roller & Sons, Milwaukee, vice president. George H. Volk of Thomas E. Hoye Heating Co., Milwaukee, was re-elected secretary-treasurer.

Industrial Combustion Buys Cleaver-Brooks Burner Div.

MILWAUKEE — Industrial Combustion, Inc., a newly-formed manufacturing company in the commercial-industrial oil and gas burner field, has acquired facilities of the former Burner Div. of Cleaver-Brooks Co., Milwaukee.

J. Vern Resek, who in the past has managed this division, has the majority stock in the new company and is president. Resek is also national president of Oil Heat Institute of America.

Industrial Combustion is currently constructing a new plant and engineering laboratories in Monroe, Wis., it was pointed out.

Air Distribution Requirements In Year-Round Air Conditioning

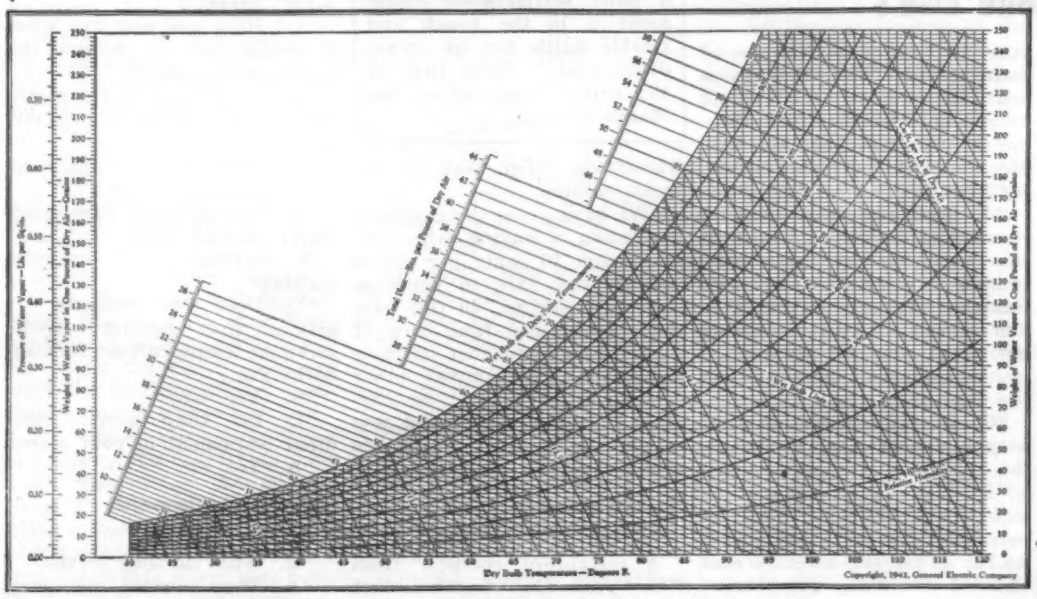

FIG. 12—General Electric Co. Psychrometric Chart (14.696 p.s.i. barometer).

Putting Psychrometry To Work (5)

By Frank D. Klein, Chief Engineer, Governair Corp.

While there are as many "form" charts for psychrometry, in general all adhere to the basic plotting of Dry Bulb against Wet Bulb. They often vary in co-plotting regarding "Relative Humidity" as opposed to "Percentage of Humidity" and "Grains of Water Vapor" as opposed to "Dewpoint Temperatures."

A principal use of a psychrometric chart is to provide a graphic illustration of the numerous calculations leading to the solution of a problem.

The psychrometric chart published by the General Electric Co. is one of the many excellent forms offered to the applicator and designer for use in solving psychrometric problems. This form is based on a Barometric Pressure of 14.696 lbs. per sq. in.

The Dry Bulb Temperature in this form is plotted against Vapor Pressure and Absolute Humidity. Dry Bulb is read on the bottom of the form, Vapor Pressure being read on the left hand side of the form and Relative Humidity read from the curved lines running from top right to bottom left of the chart.

Total Heat is read by reading from a selected point on the chart, the Wet Bulb line to the Total Heat scale extended on the left hand side.

Dewpoint, unlike the Trane Charts previously illustrated, is read where the horizontal line drawn through a selected point intersects with the 100% or saturation line (100% Relative Humidity).

Wet Bulb Temperature is read by following a line through the selected point, parallel with the Wet Bulb lines to where it intersects with the saturation line.

Typical use of this General Electric Form in the solution of some problems is illustrated as follows.

Example A:

1. An air condition inside a space is required to be 76° F. Dry Bulb—65° Wet Bulb, what will be the entire analytical condition of this atmosphere?

2. **B.t.u. per lb. dry air:**

Where the Wet Bulb of 65 intersects with the 100% Humidity line read diagonally to the left and find: 30.0 B.t.u. per Lb. of Dry Air.

3. **Relative Humidity:**

Locate on the bottom scale the Dry Bulb of 76°; follow the line straight up to where it intersects with the 65° Wet Bulb line and find: 55% Relative Humidity.

4. **Cubic Feet Per Pound—Dry Air:**

Locate once again the intersection of the 76° Dry Bulb line and the 65° Wet Bulb line and note that it falls in between the steep diagonal lines indicating Cu. Ft./Lb. Dry Air at approximately 13.75 by interpolation.

5. **Dewpoint Temperature:**

Once again locate the intersection of the Dry Bulb and Wet Bulb Temperatures and follow the line to the left that horizontally intersects on over to the 100% Relative Humidity line and read the Dewpoint Temperature of approximately 58°.

6. **Absolute Humidity and Vapor Pressure:**

Continue the horizontal line to the left discovered in (5) above and read: Absolute Humidity of 73.0 grains per lb. of Dry Air and: 0.24 lbs. per sq. in.

The foregoing are but a few of the interpretations which can be read from this quite complete type of chart. In brief these are some of the functions of analysis that play a part in everyday design and application.

Sensible Heating and Cooling:

These are a psychrometric analytical function and are determined by a straight line drawn horizontally between the Dry Bulb Temperature limits of the processes involved, which bring about a change in dry bulb temperature, wet bulb temperature, relative humidity, specific volume, total heat, but bring about no change in dewpoint temperature, moisture content or vapor pressure.

Cooling and Dehumidification:

These too are a psychrometric analytical function, and again too, are a straight line function brought about by a line drawn between the initial condition of the air undergoing change and the point of intersection with the saturated or 100% Humidity line corresponding to the temperature of the cooling surface. This is true only when that surface temperature is below that of the original Dewpoint temperature condition. The eventual condition of an air supply involving these processes will be in direct proportion to the total heat extracted. These processes involve a change in ALL properties of an air atmosphere as opposed to partial change as outlined in Sensible Heating and Cooling.

Humidification at Constant Temperature:

When Humidifying an air atmosphere without a change in temperature, this process is determined by a straight line parallel to the Dry Bulb Temperature lines within the moisture content of the change in humidity involved. In this process a change in wet bulb temperature, humidity, total heat, moisture content, specific volume, vapor pressure, and dewpoint temperature is involved.

The Intermixing of Air Atmospheres of Different Characteristics:

When two or more sources of air atmospheres, each having its own distinguishing characteristic condition, are intermixed the result of the mixture will be found by a straight line drawn between the points representing the conditions of each, after the quantitative determination of each in the mixture has been fixed, on the basis of the weights of each quantity in the mixture.

The Process of Evaporative Cooling:

As we discovered in the previous material here when an air atmosphere is brought into contact with water at a temperature equal to the wet bulb temperature of the original air, the process of cooling that takes place can be determined by a straight line drawn parallel to the wet bulb temperature of the air between the limits of the process involved.

Total Heat in this case is unaffected, but a change in dry bulb is accomplished, as are changes in specific volume, relative humidity, moisture content, vapor pressure, and dewpoint temperature. However, no change is accomplished in the wet bulb.

Thus by this brief summary of functions can be seen the intricate analytical methods placed in the hands of the applicator and designer to predetermine the problems facing him in designing systems, applying systems and equipment, and selecting equipment for the purpose intended.

(To Be Continued)

Recold Names Adachi To Head Refrigeration Engineering

LOS ANGELES—S. Robert Adachi, a laboratory engineer with Recold Corp. for the past six years, has been promoted to chief engineer of refrigeration products, announces Dan D. Wile, vice president of the company.

Adachi's appointment is in conjunction with the rapid expansion program currently under way at Recold, Wile explained.

Prior to Adachi's promotion, he had been carrying a considerable portion of this responsibility but in this new capacity, he will devote his entire time to the engineering of Recold's refrigeration products, Wile said. A graduate of the University of California with the B.S. degree, Adachi has been associated with Recold since 1952.

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Ice Cream Distribution Battle

Offering Mechanical Service on Refrigeration Units 'Thorny, Expensive,' Especially on Someone Else's

This is the concluding instalment of an article on Federal Trade Commission hearings concerning "how big a pawn refrigeration equipment is in the rough and tumble battle for ice cream distribution." First part of the article appeared in the March 24 issue.

The offering of mechanical service on refrigeration equipment is a thorny and expensive proposition to ice cream manufacturers, especially when it is on someone else's equipment.

Here is some revealing testimony on the question:

A witness from Chicago.

"Q. How else do people bid for accounts in this area?

Two Practices Used In Obtaining Accounts

"A. Well there are two other practices which you might say to a lesser degree are used in obtaining accounts. One is the offering of mechanical services on the customer's equipment other than the equipment which is loaned to the customer for the sale of ice cream, such as a man's compressor which operates his fountain, or perhaps performing work on a man's walk-in box compressor, or perhaps his freezer which is used for frozen foods.

Frozen Foods Firms 'Don't Offer Service'

"The frozen foods companies do not offer any services. They do not give any cabinets, and in many instances, the ice cream companies either service the equipment or are forced to give him extra equipment in order to sell his frozen food products which, of course, are not ice cream products.

"Q. Do you sometimes send your man out to service one of your accounts once or twice a year, five times a year? Would it amount to fifty or sixty dollars a year that you help him out with, with this servicing?

"A. Well, we have kept a record and do keep a record of our servicing of customers' equipment other than our own freezers. We are surprised to find out one time after checking over that we had serviced a man's equipment 28 times in one year. . . .

"Q. Does it necessitate your keeping an extra serviceman on the payroll?

"A. Well, it necessitates, in many instances, overtime pay because of the extra equipment. As far as keeping an extra man there, I would say no, because there are any number of jobs that they can do as far as checking up equipment other than actual breakdowns.

'Significant Cost'

"Q. Isn't it a significant cost item which you watch? . . .

"A. Yes, it is.

"Q. Is it one of those things which you would like to reduce?

"A. Yes, I think it would be a great help because it is a large factor in the cost of ice cream.

"Q. Are these practices about which you have been testifying of sufficient importance to affect your profit picture?

"A. Yes, without a question."

A DeKalb, Ill. ice cream plant manager was asked:

"Q. Can you estimate how much a year you would save, if anything, if you didn't service dealers' equipment, but just serviced your own ice cream cabinets?

"A. That is a rough estimate which I can give you. I won't hold too much to the accuracy of it.

"Probably around $1,000 or $1,500 a year, possibly up to $2,000 a year. But on the basis of what breakdown I have on the records of outside work, I would say about $1,000 a year."

A Hamburg, Pa. dairyman testified that he did not like to furnish cabinets because in nine cases out of 10, "they (the dealers) will usually call in the ice cream company's mechanic to repair anything else under refrigeration, other than the ice cream cabinet.

"We have given the customer the option of buying (the cabinet) from 10 cents per gallon less if they care to purchase their own cabinet. In this case they would also take care of their own maintenance on their equipment. Of course, other companies have tried to convince the dealers that that was a very poor policy of an ice cream company, meaning me."

'Furnished All Refrigeration Items'

A restaurant operator from New York City testified that the ice cream manufacturer who had his account furnished the compressors and all refrigeration equipment in his establishment. He said:

"Q. How many (compressors) did Breyer furnish you?

"A. Off hand, I'd say about six.

"Q. Are they all used exclusively for ice cream?

"A. No, not for ice cream, no.

"Q. What else do you use them for?

"A. For all the refrigeration that the restaurant requires.

"Q. Do you pay any rental on those compressors?

"A. No.

"Q. Do they service those compressors?

"A. Yes.

"Q. Free of charge?

"A. Right.

"Q. Do they furnish you with any other refrigeration equipment?

"A. All the refrigeration equipment.

"Q. All that you have in the store?

"A. Right.

"Q. What else do you have in the way of refrigeration not furnished by Breyer?

"A. Well, we have what we call a Bain Marie, which is a sandwich board, where your sandwich food is kept. Cold boxes that you keep your milk and your other incidentals that a restaurant requires. We have what you call a walk-in ice room, which is a big box. All essential to keeping food properly refrigerated.

"Q. Breyer services all that refrigeration equipment free of charge?

"A. Right.

"Q. Have you any idea what it would cost to service the equipment yourself?

"A. I would say in the neighborhood of a minimum of $1,000 a year.

"Q. What is your gallonage (of ice cream) a year?

"A. The gallonage runs somewhere around 2,500."

A Richmond, Va. druggist testified:

"Q. Does Pet Products Co. service that cabinet? (Self-serve ice cream cabinet furnished by Pet.)

"A. Yes, sir.

"Q. Do they service any other equipment in your store?

"A. Yes, sir.

'Service Equipment Owned by Me'

"Q. What do they service?

"A. They service my compressors, cooling equipment, for instance, the compressors to the soda fountain, or the compressors to the beer boxes, cold drinks.

"Q. And that equipment is owned by you?

"A. Yes, sir.

"Q. Tell me whether or not they charge you for parts on the equipment.

"A. We pay for all parts, all materials. There is no labor charge."

This same druggist also testified that he borrowed $2,750 from Pet to air condition his store. Other retailers said they borrowed money from ice cream companies for the same purpose—sometimes interest free.

Cites Two Cases Of Gift Equipment

Two instances where the gift of free refrigeration equipment—two among many—were recited by the president of a Houston, Texas ice cream firm.

He told first of the case of a small "Mama and Papa" store that did about $1,700 a year volume in ice cream. A big ice cream company, he asserted, "thought the account was worth enough to furnish them two ice cream cabinets, one for frozen food, and of course one for their ice cream.

"We didn't think the account was worth tying up five or six hundred dollars for a piece of equipment, that is, a frozen food cabinet. . . .

(Concluded on next page)

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Sell Me Ice Cream, But Won't Furnish A Box? 'I Wouldn't Buy from that Firm'

(Concluded from preceding page)

"We went out and talked to Mr. & Mrs. Sacco and they said, 'Well, we just didn't feel like we could afford to buy a frozen food cabinet.

" 'Here is a company that is willing to give us one for free. We just hate to quit you, but we are going to have to do it.' "

Another instance was the Bellaire Drive-In Food Market, where this company was sharing the stop with Camellia Diced Ice Cream Co. for three years until the account wanted some frozen food equipment.

The witness continued: "They put him in four of these 7-ft. cases. The owner, Mr. Nathan Gingold, says, 'Well, they are going to furnish me about $5 or $6,000 worth of equipment.' I said, 'Let's talk about that now. What kind of equipment is that? That sounds like a whole lot of equipment.'

'They Will Put In Four Cabinets'

"He said, 'Well, they're going to put four of those Frigidaire cases in there.' I said, 'Do you know what the four Frigidaire cases are costing you? They cost $657 in carload lots. I'll tell you, we have got four of them that are about a year old. We will depreciate them down to $500 apiece. That will be $2,000 worth of equipment.

" 'How about letting us sell you four of them for $2,000 and we will let you pay for them at the rate of $50 a month for 40 months, and no interest.'

"He says, 'Why should I do that? They are going to let me have them for free.'

"And I don't only get that from Mr. Gingold, I get the same story from his wife."

'I Get the Same Offer from All'

The FTC attorney put the question this way to a drive-in operator located in Knoxville, Tenn.:

"Q. The question was: Does getting a cabinet from Pet induce you to handle Pet ice cream? Your answer was 'No, I get the same offer from every company.'

"Suppose you had an offer from a company who did not supply cabinets and you got an offer from Pet to supply you cabinets, would you give any consideration to the one who didn't offer to supply you cabinets?

"A. If I understand your question correctly, a company is going to make me an offer not to furnish me boxes, and you want to know if I would be interested in their product?

"Q. Yes.

"A. I wouldn't."

In questioning a Fountain City, Tenn. grocer, the FTC attorney brought out the fact that by owning his own cabinet, the grocer could put whatever he desired into the cabinet, which he couldn't do if the ice cream company owned the cabinet. By so doing, he said, he can give the public what it wants, despite his limited floor space.

Rhodes Incorporates, Names Sales Agent

PORTLAND, Ore. — Rhodes Refrigeration Co. and H. C. Rhodes Bakery Equipment Co. were both incorporated recently, according to H. C. Rhodes, president of the two firms.

Rhodes has been in business in Portland since 1921, and has manufactured bakery equipment since 1929. The refrigeration company has manufactured heavy-duty upright freezers.

Rhodes also announced that Fowler Distributing Co. of Portland has been appointed sales agent for the manufacturer's "Zero-Freez" freezer in Oregon and southwest Washington.

The new distributors will appoint dealers and arrange marketing, and will immediately introduce the 1958 line.

The 1958 Zero-Freez will be offered in capacities from 15 to 50 cu. ft., and will feature a patented full-floating door "which will eliminate defrosting problems," according to the announcement. The box will also be completely vapor-sealed.

Hill Retires from Hussmann

ST. LOUIS — At the recent annual sales meeting of Hussmann Refrigerator Co., Charles E. Hall, general sales manager of regional accounts, announced the retirement of Edward L. Hill, division manager of the organization's New York state and New England area.

You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry. If you do have a question or problem concerning which you think the NEWS might be able to help, be sure to state the problem clearly, and provide as much information as possible.

Q. Since polyethylene plastic has such a low heat transfer, how much consideration must be given to pipe wall thickness when it is used in ice skating rinks? Can a standard 1-in. pipe be used?

W. R.—St. Louis

A. Engineers who have worked with polyethylene in skating rinks say that the normal method of building up ice—which takes several days—is not sufficiently critical to make wall thickness tremendously important. Some claim to have had reasonable success with standard 1-in. pipe with a .133-in. wall.

It is more common, however, for a special pipe to be used for ice skating rinks. A nominal 1-in. pipe, it has a wall from .092 to .100-in. Since normal operating pressures are on the order of 25 p.s.i., this wall is sufficient for service. Such pipe is usually pressure tested to 150 p.s.i.

The Department of Parks and Recreation of the City of Detroit has issued a pamphlet, "Ice Skating on Plastic," in which they describe the layout and engineering data for skating rinks of the standard hockey size. There is a nominal charge for the pamphlet.

Several of the plastic pipe manufacturers offer pipe and special fittings especially designed for skating rink construction, and two or three offer typical engineering data.

New Kerotest Office

PITTSBURGH—S. S. Willis, sales manager, Brass Div., Kerotest Mfg. Co., announces the establishment of the California sales office and warehouse at a new location—3151 E. 12th St., Los Angeles 23.

The Kerotest sales representative is Wallace R. Williams.

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17-CASE Cap. SELF-CONTAINED BEVERAGE COOLER $250
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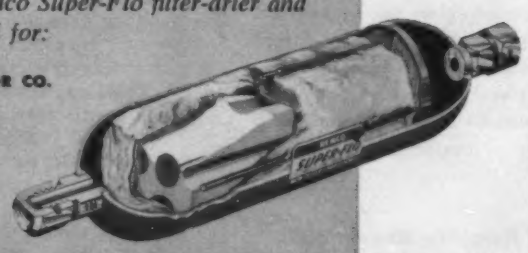

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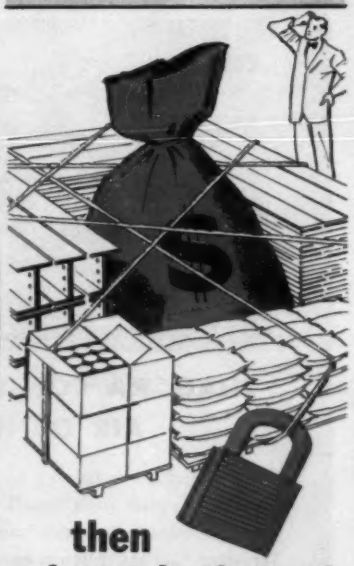

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Refrigeration Problems
And Their Solution
(*As Written by Paul Reed*)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material and the NEWS is currently re-publishing it.

Automatic Expansion Valves In Multiple

QUESTION:

I would like to know if two automatic expansion valves can be used in multiple. One man says they can, and that a lot of old ice cream jobs used four or five of them on one machine. Another man says to never do it under any circumstances.

We have two small developing tanks to refrigerate. One works fine with an automatic expansion valve.

The other tank had an automatic expansion valve also, but it was disconnected some years ago.

Now the customer wants to use both tanks again, but I told him I did not think it was practical to use automatic expansion valves on the two tanks on the same machine, but I couldn't tell him why.

ANSWER:

The function of an automatic expansion valve is to feed just enough refrigerant to an evaporator that the evaporator pressure remains constant, both at the beginning and the end of the running cycle, and despite variations in heat load in the refrigerator.

No two automatic expansion valves are *exactly* alike, and it is extremely difficult to set them to maintain exactly the same pressure. Then, too, the two evaporators cannot be exactly alike.

If two evaporators A and B in parallel are each fed by an automatic expansion valve, one valve will tend to take control.

If valve A opens slightly, the pressure in its evaporator rises, and since the two evaporators are in parallel, the rise in pressure causes the pressure of the other evaporator to rise also.

Therefore, Valve B cannot open, for the pressure in its evaporator is already above the setting of Valve B. It is possible to use line check valves, but the balance is too delicate for practical use.

You should be able to handle the two tanks in parallel on the same condensing unit by replacing both of the automatic expansion valves with suitable thermostatic expansion valves. Be sure that the bulbs of both valves are kept cold (as nearly as possible the same temperature as the evaporator.)

On submersion coil jobs, it is usually better to clamp the bulbs tightly to the part of the suction line that is still under the surface of the liquid. If the bulbs cannot be put under the liquid level, it is often advisable to well insulate the bulb from being affected by the warm room air.

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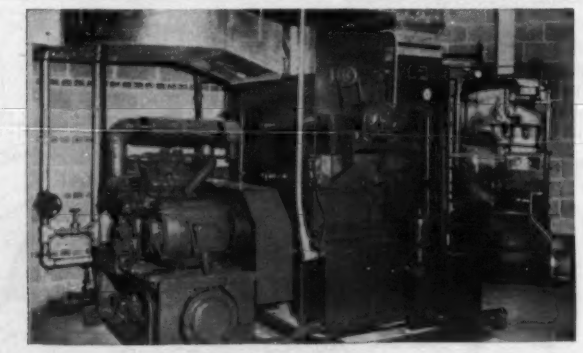


NIAGARA CONTROLLED HUMIDITY AIR CONDITIONING

This method removes moisture from air by contact with a liquid in a small spray chamber. The liquid spray contact temperature and the absorbent concentration, factors that are easily and positively controlled, determine exactly the amount of moisture remaining in the leaving air. Heating or cooling is done as a separate function.

The Niagara's Controlled Humidity Method using HYGROL moisture-absorbent liquid is

Best and most effective because . . . it removes moisture as a separate function from cooling or heating and so gives a precise result constantly and always. Niagara machines using liquid contact means of drying air have given over 20 years of service.

Most reliable because . . . the absorbent is continuously reconcentrated automatically. No moisture-sensitive instruments are required to control your conditions.

Most flexible because . . . you can obtain any condition at will and hold it as long as you wish in either continuous production, testing or storage.

Easiest to take care of because . . . the apparatus is simple, parts are accessible, controls are trustworthy.

Most compact, taking less space for installation.

Inexpensive to operate because . . . no re-heat is needed to obtain the relative humidity you wish in normal temperature ranges and frequently no refrigeration is used to remove moisture.

The cleanest because . . . no solids, salts or solutions of solids are used and there are no corrosive or reactive substances.

Write for full information; ask for Bulletins 112 and 121. Address Dept. AC-3

NIAGARA BLOWER COMPANY
405 Lexington Ave., New York 17, N. Y.
District Engineers in Principal Cities of U.S. and Canada

Pennsalt President Announces Expansion Plans for HF Products

CALVERT CITY, Ky.—During a visit to Pennsalt Chemical Corp.'s plant here, President William P. Drake announced a further expansion of the hydrofluoric acid facilities as a part of Pennsalt's program.

This expansion at Calvert, which will cost several millions of dollars, is already under way and will be completed in July.

"The merchant demand for both anhydrous and aqueous hydrofluoric acid," Drake stated, "continues to grow at a modest pace for use in the atomic energy, high octane gasoline, glass, stainless, and steel industries.

"However, the principal needs for the additional HF production stem from the rapid growth in sales of Pennsalt's new 'Isotron' line of refrigerants and aerosol propellents, and from the anticipated demands of other new Pennsalt products.

"Thus, with this expansion, Pennsalt will be able to take of both its own captive requirements, present and anticipated, as well as any foreseeable demand from its HF customers."

MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.
PRESSURE GAUGES and Dial Thermometers for all services.
MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.
MARSH INSTRUMENT COMPANY
Sales Affiliate of Jas. P. Marsh Corporation
Dept. D, Skokie, Ill.

TECHNICAL CENTER
By Frank J. Versagi, Technical Editor

Used Driers (8)

In working with an actual sludge, first extract any oily matter with carbon tet or some other solvent.

After examining the dried sludge with a magnifying glass and making all possible usual identification, divide the sludge into two parts. Cover one part with nitric acid and the other with hot distilled water. The water will dissolve any metal salts present; the acid will dissolve metal salts, metal oxides, and metals.

To the water solution add two or three drops of nitric acid. This makes the tests to follow more meaningful.

First, with the acid solution, then with the water solution remove several drops into each of several glasses or saucers. To each separated solution add one of the chemicals we used in the familiarization procedure above. That is, to one portion add household ammonia, to another add ammonium thiocyanate, and to another add silver nitrate.

In the same way, dissolve—either in acid or water, whichever will do the job—any solid matter which you separated visually. Use the magnet on all solids; it often saves a lot of time.

Table 3 summarizes the tests and indications of the several procedures we have outlined here. Keep in mind that if the amounts of sludge are small, or if the tests are doubtful (like only a hint of blue instead of a really deep blue in the test for copper) then it probably isn't enough of that particular material for you to worry about.

Practically speaking, a serviceman shouldn't send a "plugged drier" to the manufacturer the first time it happens on a given unit. If, however, he replaces the drier and it plugs up again, he should test it himself or send it to the manufacturer to determine the possible cause of its plugging, giving a complete case history.

The next instalment of Technical Center will begin a discussion of "High Temperatures."

In one rash of complaints, driers were blamed for restricting refrigerant flow on small capillary units such as used in soda bars and restaurants for cooling orange drinks, root beer, and the like.

What actually happened, however, was that the units are designed with minimum condensers and no receivers—to save space. In practice, the units become dirty and grease covered; the condenser passes some vapor. Since the volume of the vapor is too great to go through the capillary, restriction occurs.

The answer in this case was to invert the driers, so that the flow was top to bottom. This maintained at least a small reservoir of liquid which was able to pass into the capillary.

The drier can serve as a purifier for the system; the used drier can serve as detective to tell us if anything significant is going on in the unit.

It is not to be expected that the serviceman will examine every, or even most of the driers he removes. But on troublesome units, examination of the used drier is one of the easiest ways to determine major causes of trouble.

* * *

Table 3—Outline of Identification Tests

Material	Test Chemical	Result
Copper	Ammonia	Deep Blue
Iron	Thiocyanate	Deep Red
(alternate test)	Ammonia	Reddish-brown jelly-like solid
Aluminum	Ammonia	White jelly-like solid
Chloride	Silver Nitrate	White solid

(In dirty solution, ammonia test may be doubtful. Hold up to light to determine color of solid. Run thiocyanate test to confirm iron.)

Make any air conditioning prospect your customer . . .
and save installation time with
Armstrong "Frigipak"

Save up to 9 hours on every air conditioning installation with Armstrong's "Frigipak" the world's easiest-to-install air conditioner

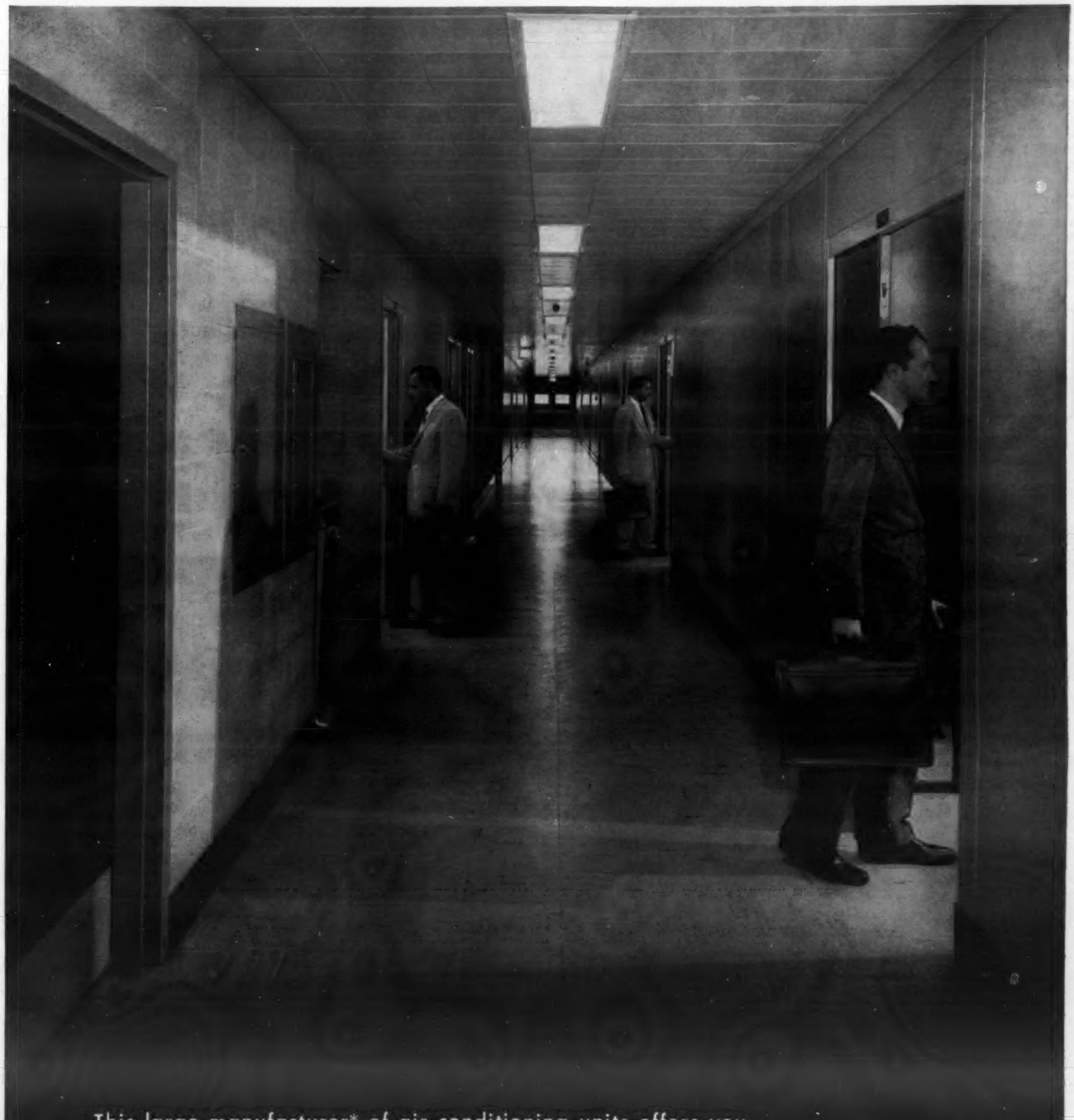
You don't have to waste time soldering connections . . fact is you have no on-the-job assembly at all with "Frigipak" air conditioners. "Frigipak" units are completely factory-assembled, ready to set-up and go!

You can make nearly any air conditioning prospect your customer, because versatile "Frigipak" fits nearly any residential or commercial building. "Frigipak" can be used as a single unit or as a split system . and this flexible air conditioner comes in a full range of sizes.

Find out all about revolutionary Armstrong "Frigipak" air conditioners today. Just call your nearby Armstrong wholesaler. He'll show you how you can cut operating costs, take fewer business risks and make big profits in air conditioning with the Armstrong "Frigipak."

ARMSTRONG FURNACE COMPANY
Columbus 8, Ohio
Division of NATIONAL UNION ELECTRIC CORPORATION

ARMSTRONG FURNACE COMPANY



This large manufacturer* of air conditioning units offers you

Thirteen doors to sales . . .

Chances Are Your Salesmen Open Only Three ⟶

*Total circulation to this one manufacturer exceeds 65 subscriptions—typical of the "across-the-board" penetration of the NEWS.

PRESIDENT
COMPTROLLER
VICE PRES. IN CHARGE OF SALES
CHIEF ENGINEER
ASSISTANT CHIEF ENGINEER
CHIEF DESIGNER
ENGINEERING LABORATORY
MGR. CONTRACTING DIVISION
ASST. TO SALES V. P.
PURCHASING AGENT
MGR. MARKET ANALYSIS
ADVERTISING & SALES PROM. MGR.
SALES MGR. ROOM AIR CONDITIONERS

All thirteen doors to sales are opened every week to the News

PRESIDENT
AIR CONDITIONING & REFRIGERATION NEWS
Inside Dope
Detroit Ua Sets Up Refrigeration, Cooling Division
Heat Wave Pops Up Air Conditioner Sales, Both Set Records; More Hot Weather Soon
Weather Outlook 'Really Favorable', Last 'Week Alone' Normal in Mid-July
N. Y. Distributor Sells 3,000 Room Units in Da

When your salesman goes into a certain large manufacturer of air conditioning and refrigeration units, he usually sees only three of the thirteen men responsible for purchasing. He may *never* get across his pitch to the Vice President of Sales. Or the Design Engineer. Or the Manager of the Contracting Division at this corporation. Yet a nod or a "no" from any of these men could make or kill a sale!

AIR CONDITIONING & REFRIGERATION NEWS reaches all thirteen of these "decision" men responsible for purchasing products like yours.* A recent survey shows *all* of the manufacturing executives at this corporation, important to your sales curve, read regularly the "Newspaper of the Industry."

And this is only one example of a manufacturer whose executives and men of buying influence turn regularly to the NEWS. In fact, paid subscriptions among manufacturers number more by far in the NEWS than in any other publication in the industry. In plant after plant, the NEWS will tell your story to men who affect your sales—men your salesmen cannot see. For more detailed information on this corporation—and how the *NEWS* fits into your selling program—contact your representative or write.

**Total circulation to this one manufacturer exceeds 65 subscriptions—typical of the "across-the-board" penetration of the NEWS.*

AIR CONDITIONING & REFRIGERATION **NEWS**

The Newspaper of the Industry

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The newspaper that carries more advertising by far than any other publication in the field.

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FRANKLIN 2-8093,
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AXMINSTER 2-9501,
JUSTIN HANNON.

DETROIT, 450 W. FORT ST.,
WOODWARD 2-0024,
JOE SULLIVAN.

To Insure 100 Days of 72° Weather--

(Concluded from Page 1, Col. 5)

tioning system properly installed by us you will receive an authentic Weather Insurance policy with money back provisions."

Commercial and industrial equipment buyers are offered, "For every day less than 100 days that the temperature does not reach or soar above 72° during this period, you will receive a cash refund of 1% of the total cost of your system. (For example—if we reach only 80 days of guaranteed weather instead of 100 you will receive a cash refund of 20% of the total purchase price. Should your system cost $5,000 this would represent a refund of $1,000—with no questions asked.)"

Approved by G-E and Apparatus Distributors, Inc., commercial air conditioning distributor here, Lloyd's of London affiliated companies will provide coverage under the firm's plan.

Mailed out on a huge "letter," Controlled Weather indicates its plan is a "pioneer" air conditioning insurance policy. A reply card can be mailed in for further information on the plan, the company says, or it suggests a phone call will do the trick.

"All other guarantees including General Electric's 'unbeatable' five-year guarantee and the normal service for one year are yours," Controlled Weather assures purchasers. "All this—at no additional cost to you and at a price that will match fair competition."

The dealership points out that *Architectural Forum*, in a recent survey of manufacturing plants and offices in the New York City area, brought to light that there were over 100 days per year so uncomfortably hot that employes either slowed down or stopped work completely. The loss of wages and efficient production ran into millions of dollars, it was stated.

Anti-Bid Shopping--

(Concluded from Page 1, Col. 2)

identical companion S. 2300.

The committee, in its report said, "the entire construction industry generally, including general contractors, is united in the belief that the proposed legislation will provide an efficient and beneficial system both for the industry and for the Federal government."

The bill, as it stands now, favors the single contract system of bidding and gives the general contractor five days after bids are opened in which to change subcontractors. It is supported by the Associated General Contractors of America.

However, it is opposed by the National Association of Plumbing Contractors, the United Association (AFL-CIO), and other mechanical contracting groups.

In addition to their opposition to the single contract system and the bid shopping loop-hole, they also object to a "five-foot rule" which would limit mechanical work to 5 ft. outside the building line.

That limitation was included in the bill passed by the House but was removed from the Senate version.

NAPC particularly has been active in urging Senators to hold public hearings on the bill at which members could voice their opposition.

Carrier Earnings--

(Concluded from Page 1, Col. 2)

the same month a year ago, the officials continued.

Bynum said in the first four months of this fiscal year, which began Nov. 1, the volume of orders obtained was 9% less than a year earlier and 13% above budget.

The Carrier executive stated he looks for earnings to be "moderately larger" this year compared with fiscal 1957. He also noted the firm is feeling "increasing effect" from cost improvement programs that have been under way.

Technical Education

Detroit ASRE To Hear Versagi Talk April 7

DETROIT — Frank Versagi, technical editor of AIR CONDITIONING & REFRIGERATION NEWS, will discuss "Technical Education in the Air Conditioning and Refrigeration Field" before the Detroit Section of the American Society of Refrigerating Engineers on Monday, April 7.

The meeting, commencing at 8 p.m., will be held in the Rackham Memorial Bldg.

In addition, a panel of experts will answer questions on application, installation, service, controls, code requirements, and distribution.

The experts include section members E. P. Callanan, A. C. Coutts, F. J. Drogosch, E. C. Lee, S. Negas, W. Stafford, and J. Winslow.

Chicago RSES To Go On 'Motor Compressor Trek'

EVANSVILLE, Ind.—Dennis J. Miller, regional manager for the Evansville Div. of Bendix-Westinghouse, has arranged to provide the slide-sound program for the Chicago Chapter of Refrigeration Service Engineers Society in conjunction with the Bendix-Westinghouse authorized wholesalers in the area, James B. Clow & Sons and Airo Supply Co.

The meeting will be held the evening of April 8 at the Harmony Post V.F.W. Hall, 3345 N. Clark, Chicago.

John W. Downen, service manager from the Evansville plant, will present the film showing of "A Trip to Bendix-Westinghouse" and "An Electrical Exploration of Motor Compressors."

Seeks Law--

(Concluded from Page 1, Col. 3)

tees to modify it for possible local adoption.

Clarkson said the Mechanical Contractors Association of Corpus Christi had asked that the city study the possibility of such a uniform regulation after inspection fees were raised.

Currently, regulations are provided by separate building, plumbing, electrical, and fire codes. The various sources of these different regulations often produce a confusion that would be reduced by a single ordinance, Clarkson stated.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

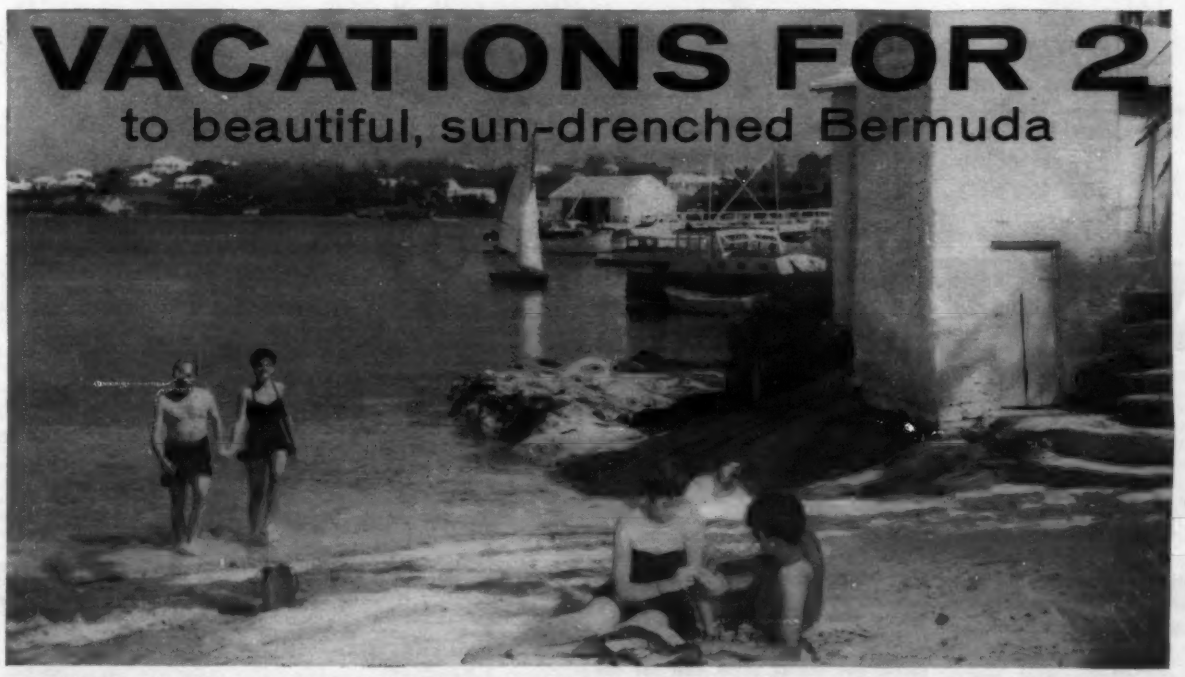
Only 25¢ each.

Attention Package and Central Station **AIR CONDITIONING DEALERS!**

Your last chance to win one of many exciting all-expense paid 7-day

VACATIONS FOR 2

to beautiful, sun-drenched Bermuda



EARN OTHER VALUABLE PRIZES, TOO! IN WORTHINGTON'S "Prize Flight to Profit" Program

RCA Transistor Portable Radio

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Keystone 8MM Rollfilm Movie Camera

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Hurry! Hurry! Hurry! You can easily be the lucky winner of one of the seven-day all-expenses-paid-for-two trips to Bermuda! And while you're trying for this exciting vacation of a lifetime you can be earning valuable prizes in the Worthington Air Conditioning "Prize Flight to Profit." Easy, too. No slogans, nothing to write. No large orders required—no stocking necessary. For full details on the most salable product line available and how you can be a winner, check the yellow pages for the name of your local Worthington air conditioning wholesaler. Or fill in and mail the coupon. Don't delay . . . time is running out!

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AC & R DIVISION, SECTION 12-3
AMPERE STATION, EAST ORANGE, NEW JERSEY
"PRIZE FLIGHT TO PROFIT"

Please send me full details on your "Prize Flight to Profit" program

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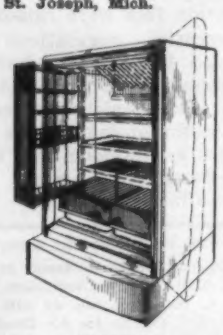
WORTHINGTON

PATENTS

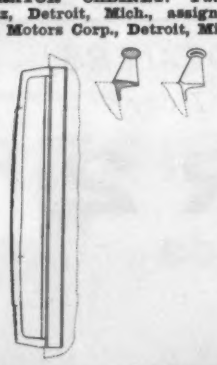
Week of Dec. 10 (Concluded)

DESIGNS

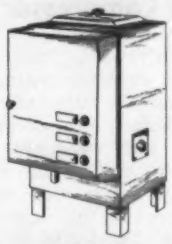
181,636. REFRIGERATOR. Montgomery Perar, Huntington Woods, Mich., assignor to Whirlpool-Seeger Corp., St. Joseph, Mich.



181,671. DOOR HANDLE FOR A REFRIGERATOR CABINET. Paul E. Petkwitz, Detroit, Mich., assignor to General Motors Corp., Detroit, Mich.



181,645. BEVERAGE DISPENSER. John T. Harris, Burlington, N. J., assignor to Rudd-Melikian, Inc., Hatboro, Pa.

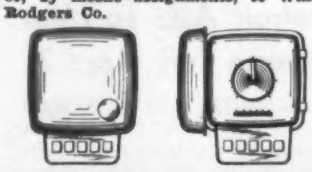


181,650. SPACE CONDITION RESPONSIVE INSTRUMENT. Robert Haven Hose, Mountainside, N. J., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

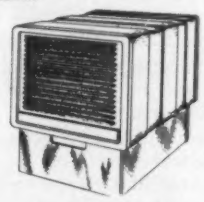
181,672. DRINKING FOUNTAIN BUBBLER. Gerard D. Phillips, Jr., Louisville, Ky., assignor to American Radiator & Standard Sanitary Corp., New York, N. Y.

181,677. CASING FOR A THERMOSTAT, OR THE LIKE. Frank B. Roth, Richmond Heights, Mo., assignor, by mesne assignments, to White-Rodgers Co.

181,678. THERMOSTAT. Frank B. Roth, Richmond Heights, Mo., assignor, by mesne assignments, to White-Rodgers Co.



181,682. AIR DEHUMIDIFIER UNIT. William R. Steiner, Detroit, Mich., assignor to General Motors Corp., Detroit, Mich.

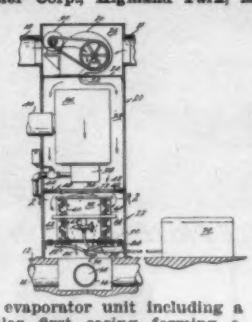


Week of Dec. 17

2,816,318. HINGE FOR LOW-TEMPERATURE CABINETS. Lawrence A. Philipp, Detroit, Mich., assignor to American Motors Corp.

In a refrigerating apparatus having a lid hinged on a cabinet by a hinge having leaves secured to the lid and cabinet, arms formed integral with and extending from the leaf of said hinge secured to said lid, a U-shaped strap having opposite ends pivotally connected to said arms, said strap formed with channel shaped sections in opposed relation, an abutment member extending between and into said channel sections for longitudinal movement therein, a coil spring having one end abutting the web of said U-shaped strap and the other abutting said abutment member. . . .

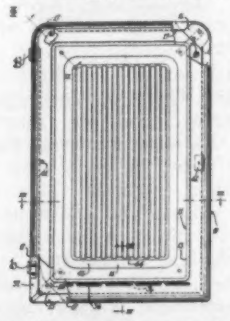
2,816,423. COOLING MEANS FOR ASSEMBLY WITH A COUNTER-FLOW FURNACE. Richard L. Brugler, Trotwood, Ohio, assignor to Chrysler Corp., Highland Park, Mich.



An evaporator unit including a rectangular first casing forming a plenum chamber and an air inlet opening in the top thereof to accommodate the admission of air, said first casing further being provided with means defining a bottom wall, a pair of spaced side walls and a pair of end walls respectively connecting said side walls, a second substantially rectangular casing mounted within said first casing, said second casing comprising substantially upright wall structure and a top wall structure cooperating to define a central air space. . . .

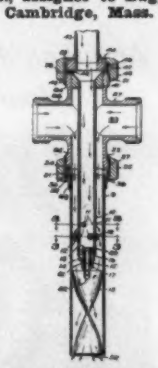
2,816,331. FREEZER CABINET DOOR CONSTRUCTION Robert E. Moore, Cedar Rapids, Iowa, assignor to Amana Refrigeration, Inc., a corporation of Iowa.

1. A refrigerator door or the like comprising an outer shell, a deep drawn inner shell secured rigidly thereto at the corners thereof by thermally non-conductive means said inner shell nesting at least partially within said outer shell, and thermally non-conductive breaker strip means secured to one of said shells and maintained in resilient contact with the other of said shells whereby a completely, thermally isolated door structure is provided, said breaker strip means having apertures therein



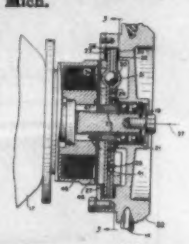
in the portion thereof associated with the bottom of said door whereby condensation formed in said inner shell may escape therefrom, said apertures having drip deflecting walls at the back thereof and underlying the edge of said inner shell to prevent passage of accumulated condensation into the space between said shells.

2,816,518. ICE CREAM BLENDING APPARATUS. Fred L. Daggett, Newton, Mass., assignor to Daggett Chocolate Co., Cambridge, Mass.



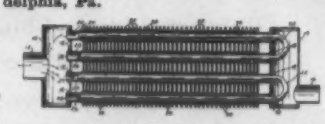
3. Ice cream blending apparatus comprising a first tube adapted for connection to a source for supplying ice cream and having a mouth adapted to discharge ice cream received from said source, a second tube mounted in said first tube and spaced therefrom to form a passage through which ice cream may flow toward said mouth, said second tube having an end spaced inward from said mouth, a blade rotatably mounted in said first tube between said end and said mouth and shaped to rotate upon contact with ice cream moving toward said mouth, said second tube having a number of spaced ports adapted to discharge fluid substantially radially into said passage.

2,816,636. REFRIGERATION APPARATUS. John Weibel, Jr., Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



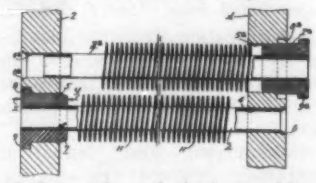
1. A clutch comprising: a driven shaft; a driving member axially fixed and rotatable about and having a bearing on said driven shaft, said driving member having two inwardly directed drive surfaces; a clutch disk longitudinally movable on and keyed to said driven shaft and engageable with one of said drive surfaces; a teaser disk coaxial with said clutch disk and longitudinally movable on the axis of said driven shaft and engageable with the other of said drive surfaces. . . .

2,816,738. HEAT EXCHANGER. John W. McElgin, Philadelphia, Pa., assignor to John J. Nesbitt, Inc., Philadelphia, Pa.



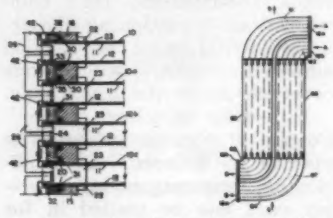
1. In a heat exchanger surface; inlet and outlet headers, a plurality of condensing tubes having their one ends opening into said outlet header and their other ends closed, a plurality of distributing tubes having their one ends opening into said inlet header, each distributing tube having its other end capped and being U-shaped with one reach lying in one condensing tube and the other reach lying in the other condensing tube, apertures distributed along opposite sides of the two reaches of the said distributing tube, and the two reaches of each distributing tube being disposed in adjacent condensing tubes and each adjacent pair of condensing tubes being in communication with a single inlet header.

2,816,739. TUBE AND SHEET ASSEMBLY. Harvey E. Stoehr, Philadelphia, Pa., assignor to Schutte and Koerting Co., Cornwells Heights.



1. In a tube and sheet assembly, a tube, confronting relatively spaced tube sheets having apertures for reception of the tube, the aperture of one of said sheets conforming in size and shape to the cross sectional form and size of the tube and having a countersunk recess at the outer end into which recess the proximate section of the tube is expanded to secure the tube in the aperture last named and to effectively seal the joint between the tube and sheet, the aperture in the other sheet being of larger size than the cross sectional size of the tube to afford a clearance space between the confronting surfaces of the tube and the wall defining the aperture last named. . . .

2,816,740. PLATE HEAT EXCHANGER WITH REMOVABLE ENVELOPES. Andre Huet, Paris, France.



1. In a heat exchanger having hollow tubular envelopes constituting fluid passages and connected at their inlet and outlet ends into correspondingly shaped orifices in tube plates; stops adjacent each end of an envelope for limiting the engagement of the envelopes in the orifices of the tube plates; internal braces adjacent said ends of the envelopes; stirrups disposed externally of the tube plate, and having arms engageable with the braces of two adjacent envelopes. . . .

DESIGNS

181,758. HANDLE FOR A REFRIGERATOR CRISPER DRAWER. Robert D. Strub, Coralville, Iowa, and Kenneth P. Schory, Bensenville, Ill., assignors to Amana Refrigeration, Inc., Amana, Iowa.

Week of Dec. 24

2,817,123. REFRIGERATING APPARATUS. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.

1. In a refrigerator, an outer wall, an inner wall spaced from said outer wall, insulation between said walls, said insulation comprising first hermetically sealed bag means, filler material within said first bag means having voids therein, and a gas filling said voids, said gas having a coefficient of thermal conductivity less than that of air, and second bag means enclosing said first bag means and having breather opening means in one of its walls, said second bag means being larger than first bag means whereby said first bag means may expand and contract within said second bag means without distorting the walls of said second bag means.

2,817,124. REFRIGERATION APPARATUS. Edwin S. Dybvig, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.

1. In a refrigerator, an outer wall, an inner wall, an insulation between said walls, said insulation comprising a unitary bag having at least two side by side compartments separated from each other by a common membrane, a first of said compartments containing a filler having voids and a gas having a thermal conductivity less than that of air filling said voids, said first mentioned compartment being formed of substance impervious to the passage of said gas, air and moisture therethrough. . . .

(Continued on next page)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

AVAILABLE. MANUFACTURERS' representative. Western New York location. Experienced in air conditioning equipment and all phases of heating units including resistance electric products. BOX A5996, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

WANTED — MANUFACTURER'S agents, country wide, to contact industries, hospitals, research and development centers. Agents to sell standard line or custom built low temperature industrial refrigeration equipment. Reply to BOX A5997, Air Conditioning & Refrigeration News.

SALES ENGINEER—28 to 35 years. Permanent position with nationally known manufacturer of refrigeration and air conditioning equipment. For Chicago area assignment and dealer contact work. Experience or schooling in this field necessary. State age, education, past connections in first letter. Must be willing to travel. BOX A5998, Air Conditioning & Refrigeration News.

DETROIT WHOLESALER of refrigeration, air conditioning, and heating line needs counter man to be trained for outside sales. Immediate full time opening with live progressive organization. Salary and commission. BOX A5999, Air Conditioning & Refrigeration News.

MANUFACTURERS' REPRESENTATIVES wanted! Central air-conditioning, air cooled 2 to 7½ tons. U-L approved. Each unit preassembled and tested at factory. The finest quality products at competitive prices. Many areas still open. Write—BOX 13372, Dallas 20, Texas.

COMMERCIAL REFRIGERATION engineer with at least ten years' experience, age 30-35. Opportunity to assume management of commercial refrigeration dept. of national coil company, Chicago location. Give experience details & salary desired. Mr. J. O'Connor, PEERLESS OF AMERICA, INC., 5900 N. Pulaski Road, Chicago 46.

MANUFACTURER'S REPRESENTATIVE who is now calling on architects, kitchen equipment firms, and restaurant supply houses. An excellent market is developing in the food serving industry for our push-thru refrigerator. Nothing quite like it. Also complete line of walk-ins, reach-ins, pass-thru, and sliding doors refrigerated. New England open, protected territory. Must have a following. BOX A5994, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED: USED ice machines—preferably Scotsman Flakers and Cubers. In reply, state model, year, serial, condition and asking price. Can use one or fifty. WATERS EQUIPMENT COMPANY, INC., Phone: RE 7-5377, P. O. Box 10013, Tampa, Florida.

WANTED—USED package water chiller for air conditioning. Approximately 60-80 tons. State in reply age and location of equipment and your name, address and telephone number. BOX A6000, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

FOR IMMEDIATE shipment: 1957 models. Motor compressor units 3 hp, single and three phase—$75.00 Each. 5 hp, three phase—$125.00 Each. BERNARD M. PACKTOR COMPANY, 228 Boulevard, New Haven, Connecticut.

REPLACE YOUR tool box with a Handi-Roll! Sturdy, water-resistant duck. Ample tool capacity. Not a catch-all. Minimum carrying-weight, with locking strap and handle. Price $5.95. Send for free folder. See your jobber, or send check to HANDI-ROLL COMPANY, 12381 Wisconsin Avenue, Detroit 4, Michigan. Postpaid. Manufacturers' agents wanted.

LATEST STYLE 57 production 1 h.p. 230 V. single phase 50/60 cy. Freon-12 hermetic compressors Model AS1T16 air conditioning HBP. Complete with Klixon overload, relay, starting and running capacitor. $59.00 ea. Send for free circulars and bulletins on air conditioning and refrigeration values. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

HEATING & air conditioning contracting firm for sale. Established, franchised dealer on Florida's Gold Coast —top brand equipment. Complete installation and service facilities, trained personnel, all necessary equipment and inventory. Yearly gross: $200,000.—. Asking $35,000.—. BOX A6001, Air Conditioning & Refrigeration News.

NO FLOOR DRAIN?

INSTALLING AIR CONDITIONER ICE CUBE BIN DRINKING FOUNTAINS

BUY THE BEST

KESCO

AUTOMATIC CONDENSATE WATER DISPOSAL

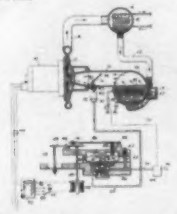
PUMPS

1/30 H.P. to 1/3 H.P. 10 ft. to 50 ft. Head

At Your Wholesaler

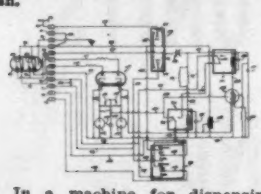
(Continued from preceding page)

2,817,213. REFRIGERATION APPARATUS WITH LOAD LIMIT CONTROL. Robert G. Miner, La Crosse, Wis., assignor to The Trane Co., La Crosse, Wis.



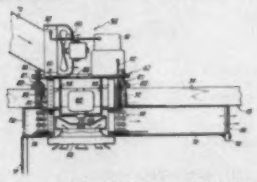
1. Refrigeration apparatus comprising a condenser, an evaporator, a compressor connected to draw refrigerant from said evaporator and discharge the refrigerant into said condenser, an electric motor for driving said compressor, means for throttling the flow of gas to said compressor, a fluid motor for positioning said throttling means, a fluid thermostat responsive to the temperature of said evaporator, a fluid relay connected to receive fluid from said fluid thermostat and to transmit fluid to said fluid motor and means responsive to the magnitude of the electrical energy drawn by said electric motor. . . .

2,817,214. PORTION CONTROL FOR DISPENSING FREEZER. Harvey F. Swenson and John M. Finke, Seattle, Wash.



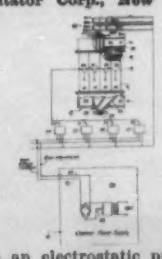
1. In a machine for dispensing a bulk commodity, a normally inactive means operating when activated to dispense the commodity at a substantially constant rate, at least two normally inactive and selectively operated timing devices having timing cycles of differing duration, means operatively interconnecting both of said timing devices with the dispensing means operating upon activation of either of said timing devices to cause the dispensing means to be operated in concert therewith, and a foot-operated means acting both to make a selection as between the timing devices and to cause the selected timing devices to be activated simultaneously with the selection.

2,817,217. AIR CONDITIONING MEANS. Herman E. Winkler and Howard P. Murphy, Lebanon, Ind., assignors to Stewart-Warner Corp., Chicago, Ill.



1. In a residential type building a ceiling structure, a rectangular opening in the ceiling structure, and an air conditioning unit mounted so as to project through the opening, said air conditioning unit comprising a head portion including a compressor, a condenser connected to the refrigerant outlet from the compressor, and a fan positioned to blow air across said condenser, said head portion including a support member mounting said compressor, said condenser and said fan on its upper side and having a horizontal elongated shape and horizontal dimensions smaller than the corresponding dimensions of the ceiling opening and with the long dimension of said support member greater than the short dimension of the ceiling opening. . . .

2,817412. COMMON POWER SUPPLY FOR PRECIPITATOR BANKS WITH INDIVIDUAL CONTROL. Hans Klemperer, Belmont, Mass., assignor, by mesne assignments, to APRA Precipitator Corp., New York, N. Y.



1. In an electrostatic precipitator; a number of separate banks of electrodes; a single power unit associated with said electrode banks for supplying a high voltage current thereto, individual grid-controlled electronic valve means connected with said power supply unit and each associated with an individual electrode bank for separately controlling the current supply to said electrode bank independently of other electrode banks. . . .

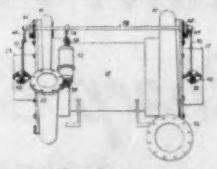
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D.C.

2,817,413. ELECTROSTATIC PRECIPITATORS. John E. McDonald, Newton, and William J. Roos, Sharon, Mass., assignors to Westinghouse Electric Corp., East Pittsburgh, Pa.

1. An electrostatic precipitator comprising a collector cell having a plurality of parallel, spaced-apart, collector plate surfaces, some of said surfaces being conductive, others of said surfaces having a plurality of spaced-apart conductive lines thereon from their entering portions to their air leaving portions of said others of said surfaces being dielectrics except for said lines, the air entering edges of said dielectric surfaces extending outwardly beyond the air entering edges of said conductive surfaces.

2,817,475. CENTRIFUGAL COMPRESSOR AND METHOD OF CONTROLLING THE SAME. Arthur M. G. Moody, La Crosse, Wis., assignor to The Trane Co., La Crosse, Wis.



1. A centrifugal compressor comprising a first and a second stage each having an impeller, an inlet, and an outlet, means for conducting gas from the outlet of the first stage to the inlet of the second stage, spin vanes pivotally adjustably mounted in the inlet of said first stage about axes radial to the axis of rotation of the impeller of said first stage, spin vanes pivotally adjustably mounted in the inlet of said second stage about axes radial to the axis of rotation of the impeller of said second stage, a motor, a first crank driven by said motor, a first connecting rod driven by said first crank and connected to the spin vanes of the first stage for angularly adjusting the same. . . .

2,817,502. APPARATUS FOR FREEZING DESSERTS. Lester N. Yohe, Havertown, Pa., assignor, by mesne assignments, to The Silex Co.

1. In a freezer of the character described the combination of a tray provided with an outwardly extending flange at its upper portion, a lid casing for said tray, an agitator in said tray, a motor carried by said lid casing, motion transmitting means in said lid casing operatively connected to said motor and agitator for imparting movement of the former to the latter, and a clip device engaging said lid casing and said tray flange, comprising a lever having its one end portion pivoted to the side of the lid casing, above said flange of the tray. . . .

Chase Brass Opens New West Coast Warehouse

S. SAN FRANCISCO—Chase Brass & Copper Co., Inc., has opened a new warehouse and sales office at 230 Shaw Rd. here to speed distribution of its mill products and copper tube fittings on the west coast.

A modern, one-story, 62,000-sq. ft. structure, the new warehouse replaces an older one proved too small for present demand for brass and copper rod, wire, sheet, and tube in the Bay area.

Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

The Chevrolet auto air conditioner is the fifteenth make to be discussed in this series. Makes previously described were A.R.A., Artic-Kar, Frigette, Frigikar, Kauffman, Mark IV, Airtemp, Mobilette, Novi, Vornado, Polar-Temp, American Motors, Buick, and Cadillac.

CHEVROLET (3)

Chevrolet Motor Div.
General Motors Corp.
Detroit 2, Mich.

SERVICE HINTS

Evacuating System

Chevrolet recommends the use of a vacuum pump for evacuating its air conditioners. Procedure is the same for both 1956 and 1957 models.

The double evacuation method is followed. The system is first pulled down to approximately 28 in. vacuum and held there for 10 minutes with the vacuum pump operating.

Vacuum is broken with Refrigerant-12.

The system is again pulled down to 28 in. for another 10 minutes. It is now ready for charging.

Charging System

The 1956 and 1957 Chevrolet systems are charged through the low side in the usual manner with refrigerant in the vapor state.

Refrigerant-12 is employed by Chevrolet. Complete charge is 2½ lbs. in 1956 models, 4 lbs. in 1957 units.

Because it may not be possible to get the full charge into the system without the compressor running, Chevrolet advises that the engine be operated at a minimum speed of 1,000 r.p.m. and the clutch energized by connecting a wire from the battery positive terminal to the clutch coil.

Operating Pressures

To permit a check on performance of the Chevrolet air conditioning system, the accompanying tables show normal discharge temperatures and head and suction pressures. These differ somewhat for 1956 and 1957 models, so a separate table is provided for each.

In conducting the performance test the car doors and windows must be closed. The hood is kept down on 1956 models, up on 1957 models.

Controls are set for maximum cooling, blower in high speed position, heater control fully off. On 1956 models control is set for 100% recirculating air; on 1957 models, full outside air is used.

Use of a large fan in front of the car radiator is also recommended when checking the 1957 model.

With both models the car engine is operated at 1,500 r.p.m. and the system allowed to run approximately 10 minutes to stabilize.

Trouble Chart

The following summary of abnormal conditions in 1956-57 Chevrolet conditioners also lists possible causes or results of those conditions.

1956 Chevrolet Operating Pressures, Temperatures

Ambient (°F.)	Head Pressure (p.s.i.g.)	Suction Pressure (p.s.i.g.)	Maxi. R.H. Nozzle Temp. (°F.)
70	130-150	11-15	42
80	155-175	14-18	42
90	185-205	17-21	42
100	215-235	20-24	48

1957 Chevrolet Operating Pressures, Temperatures

Ambient (°F.)	Maximum Head Pressure (p.s.i.g.)	Minimum Suction Pressure (p.s.i.g.)	Minimum R.H. Nozzle Temp. (°F.)
70	140-160	16-22	45-52
80	145-220	20-28	45-54
90	190-250	21-31	46-56
100	210-280	22-35	48-60

High head pressure.

a. Air in system or overcharge of refrigerant.
b. Blocked air circulation through condenser.
c. High air temperature across condenser.

Low head pressure.

a. Restricted expansion valve.
b. Faulty compressor — will not pump.
c. Shortage of refrigerant.
d. Low air temperature across condenser.

Shortage of refrigerant.

a. Hissing noise at expansion valve.
b. Sight glass shows bubbles or foam.
c. High coil temperature.
d. Low head pressure.
e. Very little or no sweating.

Continuous compressor operation.

a. Low car temperature.
b. Coil icing or heavy frost.
c. Coil icing or heavy frost and high car temperature.
d. Defective clutch or thermostatic switch.

Poor or no refrigeration.

a. Control panel linkage to water control valve or thermostatic switch not installed or adjusted properly.
b. Shortage of refrigerant.
c. Improper adjustment of thermostatic switch.
d. Expansion valve set too high or open too wide. (Not adjustable on 1957 models.)
e. Expansion valve setting not high enough. (Not adjustable on 1957 models.)
f. Expansion valve bulb improperly located.
g. Expansion valve bulb discharged.
h. Expansion valve needle leaking due to improper seating.
i. Compressor will not pump.
j. Heavy coating of frost or ice on coil.
k. Partially restricted receiver-drier, liquid line, or suction line.
l. Excessive head pressure.
m. High air temperature across condenser.
n. Magnetic clutch slipping.
o. Magnetic clutch coil not operating.

Needle stuck open in expansion valve.

a. Frosted or sweating suction line.
b. Poor refrigeration.
c. High head pressure.

Needle stuck shut in expansion valve.

a. No cooling.
b. Low suction pressure.
c. No refrigeration.

Controls Co. of America Buys Certain Assets Of Breese Burners

SCHILLER PARK, Ill. — Louis Putze, president, announced that Controls Co. of America has purchased from Breese Burners, Inc., of Santa Fe, N. M., certain assets consisting of laboratory equipment, materials, designs, products, and United States, Canadian, and foreign patents.

The Breese development engineering operation at Santa Fe and sales offices at Columbus, Ohio, will comprise a wholly owned subsidiary but will be operated independently of Controls Co. and will retain the Breese name, Putze said.

Breese specializes in the design and development of vaporizing oil burning devices, for which it licenses manufacturing companies in the U. S., Canada, and abroad. Its development program will be intensified and its scientific discoveries and product advancements will be made available to the U. S., Canadian, and foreign home heating industries, "thus generating increased demand for the Controls Co. line of A-P oil burning controls," Putze said.

MANAGER

Residential Air Conditioning Sales

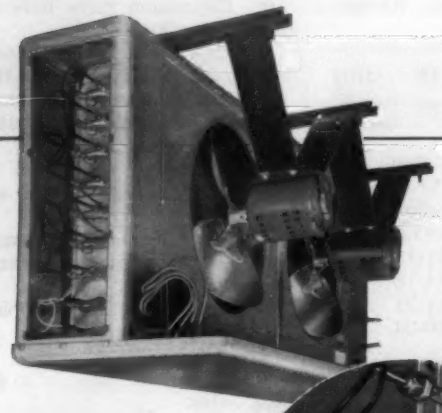
SALES DEPARTMENT MANAGER for major line of residential air conditioning equipment needed by home office of leading manufacturer of air conditioning, heating and ventilating equipment. Besides managerial ability, this man should have five to ten years experience calling on outlets for air conditioning equipment, or in sales at the dealer retail level. Preferably, sales experience should be in residential and/or self-contained air conditioning equipment.

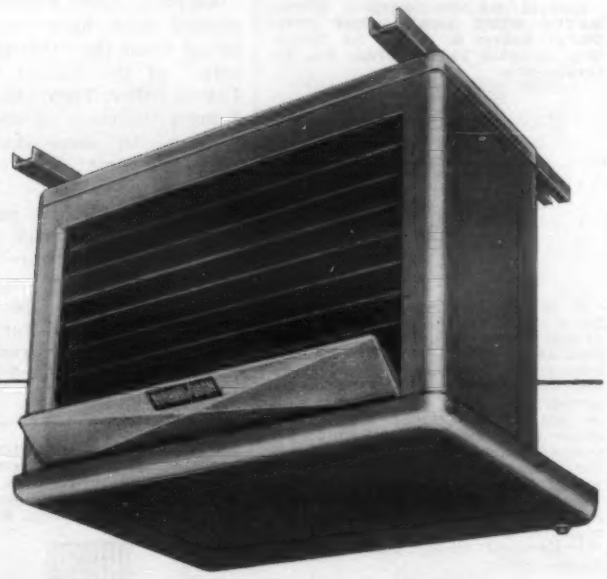
He will be active in all phases of this company's expansion into the residential air conditioning field. Duties will include assisting in training sales personnel, working on advertising plans, and coordination of equipment development programs.

Applicant should be under 35, and a college graduate. For information on our company and the product you will handle, refer to cover story of Feb. 8 issue BUSINESS WEEK magazine.

Act immediately on this opportunity. Send request for interview including resume and salary requirements to: Manager, Staff Employment, The Trane Company, La Crosse, Wis.

Dunham-Bush



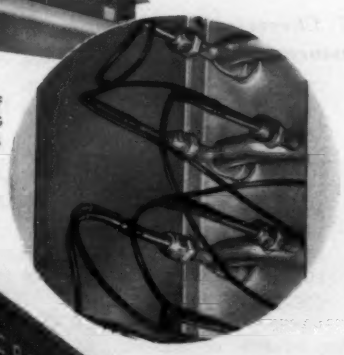


ED

ELECTRIC DEFROST UNITS MEET EVERY DEMAND FOR EFFICIENT DEFROSTING

at Merck-Sharp & Dohme

BIOLOGICAL LABORATORIES



CLOSE-UP VIEW OF MECHANICAL SEALING OF HEATING ELEMENTS

'ED' 180 Electric Defrost Unit Cooler in Main Biological Storage Vault.

Polio vaccine storage in low temperature room

10 HP Brunner condensing units

Consulting Engineer.....ERNEST A. D'AMBLY, PHILA.
Wholesaler.....ACAR SUPPLY CO., PHILA.
Contractor.....WILLIARD, INC., PHILA.

Here at Merck-Sharp & Dohme Biological Laboratories, North Wales, Pa., to maintain the constant low temperatures necessary for the storage of polio vaccine there must be no defrost problems . . . and these Dunham-Bush Electric Defrost units insure trouble-free operation.

INNER-FIN Coil construction, exclusive with Dunham-Bush, permits the units to defrost from the *inside* . . . the most rapid, positive means of defrosting.

The heat source for defrosting is a specially designed heater cable installed within the inner tube. The greater surface area made possible by the Inner-Fin construction assures quick heat distribution, quicker defrosting, and minimum room temperature rise. The mechanical sealing of the heating elements gives positive protection against entry of any moisture into inner tube system.

For more information on these units or other products in the extensive Dunham-Bush line contact your nearest Dunham-Bush Sales Engineer or write direct.

Dunham-Bush, Inc.

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